

**KINDERGARTEN IN PENNSYLVANIA: DECISION MAKING IN SCHOOL
DISTRICTS AND THE EFFECTS OF CURRENT STATE POLICIES**

by

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This thesis examines how Pennsylvania public school districts decide to offer full-day or half-day kindergarten and the effects of related state policies on decision-making. All 499 of Pennsylvania's superintendents from school districts that offer kindergarten received survey invitations, and 162 leaders from Pennsylvania's public schools completed a survey that focused on how districts' decided to provide full- or half-day kindergarten for the 2014-2015 school year, the influence of funding specifically, and the effects of Pennsylvania's compulsory school age. The researcher also analyzed kindergarten enrollment from 2003 to the present, specifically examining the change in kindergarten program type with respect to the overall socioeconomic status (SES) of students served, in relation to the availability of Accountability Block Grant funds, which were commonly have been used to create and sustain full-day kindergarten programs. Money was an important factor in decision-making among school districts planning to offer full-day kindergarten and those planning to offer half-day kindergarten. A lack of available funds was a chief factor in most school districts' decision to offer half-day kindergarten, although this was less so for school districts in the highest SES categories. School districts offering full-day kindergarten indicated multiple important factors in their decision, most commonly indicating factors supporting academic outcomes for students who attend full-

day programs. The availability of money was also an important factor among participants who indicated that their school districts intended to offer full-day kindergarten for the coming year, and participants indicated ways that their districts ensured the availability of funds through budgetary reduction strategies. The compulsory schooling age had nearly no influence on school districts' decision-making or on student enrollment in kindergarten. Implications for policy are considered.

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1.0 INTRODUCTION

Pennsylvania policy states that children are not required to enroll in school until age eight; furthermore, school districts in Pennsylvania are not required to provide kindergarten to students (Education Commission of the States, 2011; Education Commission of the States, 2013). Pennsylvania is one of just five states that do not require local school districts to offer kindergarten (Education Commission of the States, 2011). Kindergarten has an important function in preparing a child for later schooling (Elicker & Mathur, 1997), and research shows that full-day kindergarten is especially beneficial to children from low-income households (Cooper, Batts, Patall, & Dent, 2010).

1.1 BACKGROUND OF THE PROBLEM

Kindergarten is no longer just a transition between preschool or daycare and “real” school. This grade has become the first major year of schooling: in Pennsylvania, 71.5% of kindergarteners attended for the full school day during the 2012-2013 school year (KidsCount, n.d. a). Pennsylvania school district leaders have shown that, given the resources, they will invest in early childhood education, particularly in providing full-day kindergarten to students. Governor Ed Rendell instituted the Accountability Block Grant (ABG) into the state budget in 2004 (Pennsylvania Office of the Budget, 2004), which led to an increase of full-day kindergarten

enrollment by 91% in four years (PPC, 2011). As ABG funding dropped under Governor Tom Corbett's administration (Pennsylvania Office of the Budget, 2009), school districts struggled to maintain their full-day programs (Pennsylvania State Educators Association, 2013).

Ideally, all school districts would provide an option for full-day kindergarten, and the conversation would stop here. However, Pennsylvania's funding system does not require grade-level reporting and does not provide specific funds for kindergarten, not even for all districts can offer a half-day program (PA Office of the Budget, 2012; PA Office of the Budget, 2013). Without guaranteed funding and a mandate requiring school districts to provide kindergarten, eliminating the program is a legal and potentially viable option. Additionally, districts that provide full-day kindergarten may consider cutting back to half-day (Leu, 2013; Miller, 2013), an option that, given kindergarten funding and options in other states, is insufficient in today's educational culture, particularly for our most at-risk children.

1.2 RESEARCH PROBLEM

My thesis explores what districts need to be able to provide a full-day program for their students. While Pennsylvania has very active early childhood education advocates (Pennsylvania Partnerships for Children, the Pennsylvania Association for the Education of Young Children, and Pennsylvania Head Start, among others), little research regarding kindergarten implementation exists at the school district level. My study aims to fill in gaps in the research, namely by answering the following questions:

1. What is the current status of full-day kindergarten in Pennsylvania public schools?

How widespread is the phenomenon, and what policy patterns can be ascertained?

2. What do school districts need in order to provide full-day kindergarten to children?
3. How might a state policy of compulsory kindergarten attendance in Pennsylvania affect school districts? How might such a policy affect the state?

1.3 RESEARCH DESIGN AND HYPOTHESIS

This study is comprised of a trend analysis and quantitative analysis of survey data. The trend analysis involves historical kindergarten enrollment data from 2003 and free/reduced lunch data from 2005, each at the school district level. The quantitative analysis involves survey data of 162 participants from the 499 school districts in Pennsylvania that provide kindergarten.

My hypothesis was that, districts serving low-income, working-class, and lower-middle class families will provide full-day kindergarten provided they are financially able to do so, and that upper-middle class school districts are less interested in providing full-day kindergarten. As I began the study, I suspected that Pennsylvania would need to write policy that requires school districts to provide at least half-day kindergarten, guarantees funding for at least half-day kindergarten (perhaps guaranteeing full-day funding for school districts at or above a certain poverty level), and, to solidify the importance of the previous statement, modify the compulsory schooling age.

1.4 SIGNIFICANCE OF THE STUDY

I believe my thesis is valuable and has the potential to effect real, significant change in state policy. I have yet to find research that examines kindergarten trends within Pennsylvania, particularly at the school district level. Some state representatives have proposed legislation to lower the compulsory schooling age and/or to provide kindergarten funding, yet these bills have historically been abandoned (HSLDA, 2006). There is no denying that kindergarten is important for children, and it would be an honor if my study were able to support a real change in legislation and policy. Additionally, the value of kindergarten has not been translated into state-level policy (as evidenced through absent financial and statutory backing), and I believe that my study can provide meaningful, Pennsylvania-specific evidence, possibly leading to policy change.

Personally, my primary interest in education is equity, and Pennsylvania's policies as they stand fail to serve its children during their first educational experiences. Resource-rich school districts like Upper St. Clair (in Allegheny County) and North Penn (in Montgomery County) do not face the same challenges as their urban, resource-poor neighbors (Pittsburgh Public Schools and the School District of Philadelphia, respectively), and children from wealthy families and affluent schools start out their educational career substantially ahead of lower-income children (Coley, 2012). By failing to provide the kind of early learning environments necessary to level the playing field (specifically full-day kindergarten), the state is failing to invest in its children during critical learning opportunities. By surveying superintendents (or those that may best be able to answer my questions within a local district), I have obtained information that might help in forming state policy affecting the state's provisions for kindergarten.

1.5 THESIS ORGANIZATION

My thesis is organized into five chapters. The first chapter provides an overview for the entire thesis, beginning with the background of the research problem, a description of my research questions, and the purpose and significance of the study.

The second chapter consists of a three-part literature review. The first section examines the role that kindergarten plays in merging preschool and formal schooling, including a discussion of pre-school inequities. The literature review then synthesizes research surrounding full-day and half-day kindergarten, followed by an examination of kindergarten and compulsory schooling policies in other states. The literature review concludes with an identification and discussion of the gap in literature regarding state-level research in Pennsylvania's kindergarten policies, particularly compulsory schooling age and kindergarten provision.

The third chapter describes the research methods, including the rationale, and limitations of the study. Chapter four presents results. The results section first includes trend analysis of publicly available school district records. These data are used to frame qualitative survey data, which is the second part of the results section. The results section includes demographic information about the surveyed population.

Chapter five contains a discussion of the results in light of the research questions, the data's implications for state policy, and recommendations for further study regarding kindergarten effectiveness, state educational budgeting, and other related topics.

2.0 LITERATURE REVIEW

Kindergarten has nearly universal enrollment (National Center for Educational Statistics [NCES], 2000) and is the base for advanced curricular studies (PA Department of Education, n.d. a; PA Department of Education, n.d. b). Research demonstrates that children who attend kindergarten have greater outcomes at graduation than do children who do not attend kindergarten (Prince, Hare, & Howard, 2001), and attendance data shows that children with poor attendance habits in kindergarten have poorer attendance habits and lower educational achievement outcomes throughout their schooling. Children from low-income families face inequities long before they get to kindergarten, entering school less prepared to learn than do children from high-income families (Reardon, 2011). While simply attending kindergarten does not automatically close the achievement between these two groups (Lee, Burkham, Honigman, & Meisels, 2006), it is important for low-income children to maintain the learning pace with their higher-income peers. Furthermore, full-day kindergarten has been found to provide students with greater academic, social, and emotional benefits than would be provided in a half-day program (Cooper et al, 2010; Cryan et al., 1992; Lee et al, 2006; Elicker & Mathur, 1997).

The first part of this chapter reviews literature that describes the importance of kindergarten as an academic foundation for a child's education, particularly for children from low-income backgrounds. This includes a description of inequalities that exist between children from varying socio-economic statuses as well research findings that support the benefits of

attending kindergarten, principally full-day kindergarten. In addition to the general literature, both this section of the chapter and that which follows include some background work on Pennsylvania and Pittsburgh to support the literature review, given the concentrated state-level focus of this thesis. The second part of this chapter provides a description of policies related to kindergarten at both the national and state level as well as a description kindergarten enrollment throughout both the United States and Pennsylvania. It concludes with a synthesis of policies and literature related to the challenges the state and school districts are currently facing to provide full-day kindergarten.

2.1 THE IMPORTANCE OF KINDERGARTEN

2.1.1 Inequitable from Birth

2.1.1.1 Education and Child Care

Inequality in income translates to inequity for young children long before they ever enter a classroom. Substantial vocabulary differences, for example, are notable within the first 36 months of a child's life. In Hart and Risley's (2004) study of children's development of vocabulary, children with parents in professional positions had an average vocabulary of 1,116 words by their third birthday. Children whose parents were working class had a significantly truncated vocabulary of 749 words, and children whose parents were on welfare had an average vocabulary of just 525 words (Hart & Risley, 2004).

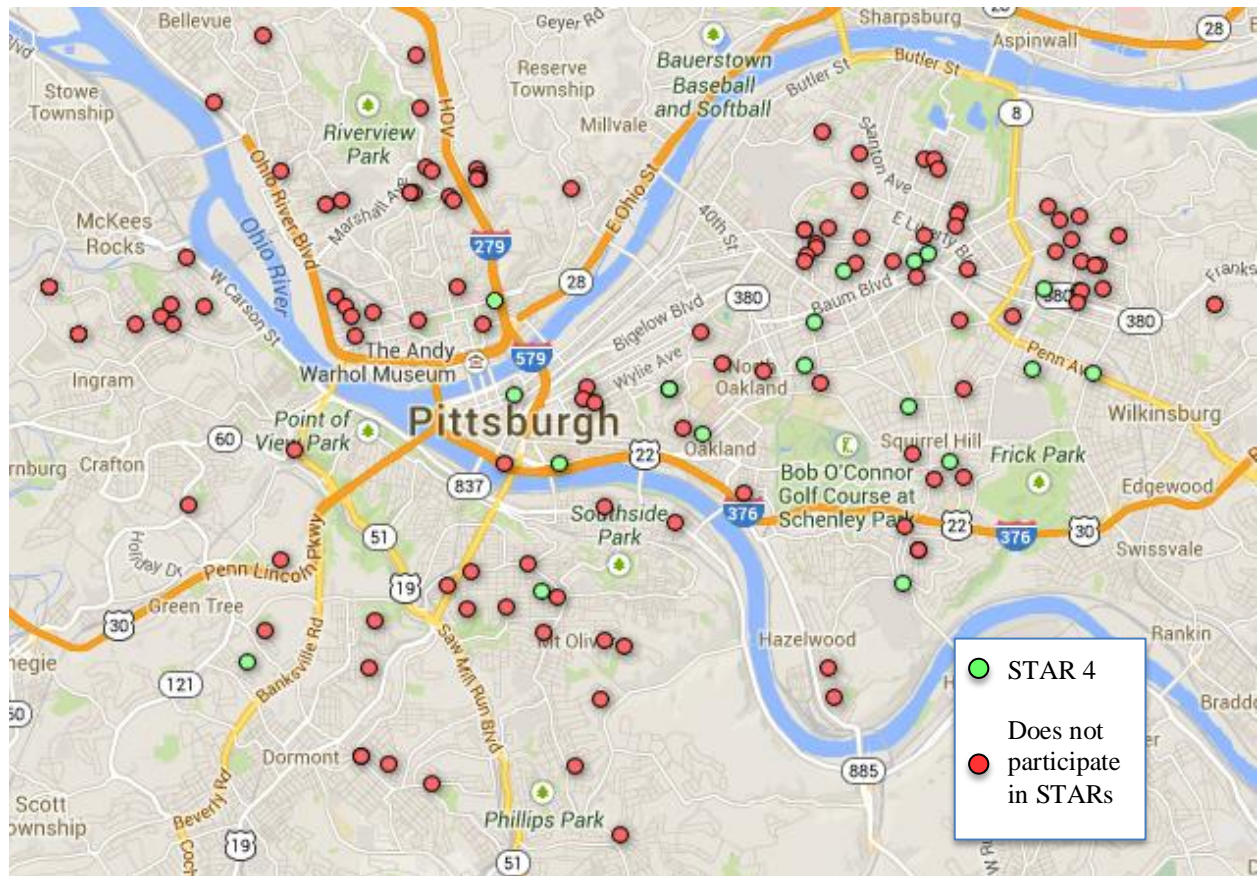


Figure 1. STAR 4 providers and providers who do not participate in STARS in the City of Pittsburgh (created by the author).

To compound this problem, families in neighborhoods with high concentrations of poverty have low access to high-quality childcare. In the Pittsburgh Public School system, 69% of children are eligible for free or reduced lunch (PA Department of Education, 2013), and only 2% of child care facilities in the City of Pittsburgh are of the highest quality (PA Office of Child Development and Early Learning, 2013b). Pennsylvania uses a rating system called the Keystone STARS to indicate the quality of child care facilities¹ throughout the state. While it is

¹ Child care centers, group child care homes, and family child care homes may all participate in Keystone STARS. Relatives or neighbors who provide care for children may not.

voluntary, participation in this system indicates a dedication to quality care: for example, STAR 1 facilities (the lowest level) require no qualifications for staffing; in STAR 4 facilities (the highest level), all lead teachers must have a bachelor's degree (PA Office of Child Development and Early Learning, 2013a). With regards to curriculum, a STAR 1 facility must maintain a copy of the state's Early Learning Standards; STAR 4 facilities must "[utilize] a curriculum that has been aligned to the Learning Standards for Early Childhood" (PA Office of Child Development and Early Learning, 2013a, p. 6). Of the 8,337 registered child care facilities in Pennsylvania, more than 4,500 have no STAR rating (meaning that they do not participate in the program); just 573 qualify as STAR 4 programs² (PA Office of Child Development and Early Learning, 2013b). Figure 1 shows availability of STAR 4 child care providers as compared to the availability of providers who do not participate in the STAR system within the City of Pittsburgh. This map shows the location of 136 providers³ – only 20 of which provide top-tier care to children (PA Office of Child Development and Early Learning, 2013b).

2.1.1.2 Health

Income has a significant effect on a child's health starting at birth: poor children are 1.7% more likely than nonpoor children to have low birth weight (Brooks-Gunn & Duncan, 1997). In general, poor children require twice as many short-term hospital stays than do nonpoor children (for children from birth to age 17), and in general, "compared with nonpoor children, poor

² As of September 2013, 573 facilities are STAR 4; 527 are STAR 3; 1,053 are STAR 2; and 1,678 are STAR 1.

³ There are 116 providers within the City of Pittsburgh who do not participate in STARS. They are, however, licensed by Pennsylvania to provide child care.

children in the United States experience diminished physical health” (p. 57). Also, poor children are 10 times more likely to experience hunger and almost seven times more likely to experience child abuse and neglect than are nonpoor children.⁴

In researching poverty and food security (hunger) among various populations, Bhattacharya, Currie, and Haider (2004) found that “unsurprisingly, most people who are not poor are not food insecure. What is more surprising is that only a minority of poor households report food insecurity” (p. 846). While most low-income families are able to obtain enough food, their particular food choices tend to be less healthy than those of higher-income families (Bhattacharya et al., 2004). The authors continue that the financial challenges that poor families face may lead them to make more unhealthy choices, such as buying cheaper or high calorie junk food over more expensive fresh fruit or obtaining a gym membership, and that poor adults “may also be more likely to lack the education necessary to make wise choices among the myriad foods available” (p. 846).

As a result of these equity issues, research shows that children from low-income families are more obese than children from high-income families (Bhattacharya et al., 2004; Skelton, Cook, Auinger, Klein, & Barlow, 2009). For children ages two to 19, 17.4% of all children in poverty, 16.3% of all children who are low-income, and just 13.2% of all higher-income children are obese (Skelton et al., 2009).

⁴ Gunn and Duncan (1997) used the terms “poor” and “nonpoor” in their article, so I used these terms in generalizing their findings even though, in today’s research, they are not as common as phrases like “low-income” and “in poverty.”

2.1.1.3 Demographics and School Readiness

Children come to kindergarten with a variety of preschool experiences and a wide array of school readiness skills, and, with little variation, children from high-income families are more prepared to begin school than are children from low-income families (Cooley, 2012). Recent research (Gamoran, 2001; Reardon, 2011) has shown that socioeconomic status, not race, is the largest factor of educational inequity. While race and socioeconomic status are often linked, the gap between children from low-income families and high-income families is larger and has grown faster than the gap between black and white children (Reardon, 2011).

In a study of school readiness in incoming kindergarteners in 1998, Cooley (2012) found that, while nearly all children have some reading and math readiness when entering kindergarten, students' SES was correlative with ability in both subject areas,⁵ and substantial disparities in kindergarten readiness existed between the first and fifth SES quintiles areas (Cooley, 2012). For example, 85% of children in the highest SES quintile and only 39% of children in the lowest SES quintile demonstrated an ability to recognize letters of the alphabet. Socio-economic status, too, was correlative to incoming kindergarteners' experiences with reading outside of the classroom (Cooley, 2012). In both the percentage of parents who read to their children on a near daily basis and the percentage of children who looked at picture books outside of school every day, children from high-income families scored higher than children from low-income families.

⁵ Researchers noted throughout their report that while some differences did exist among racial comparisons, many differences were insignificant when controlled for SES.

2.1.2 Kindergarten Outcomes

2.1.2.1 Kindergarten Enrollment Versus No Kindergarten Enrollment

Dhuey (2011) notes the lack of extensive research on children who have attended kindergarten versus children who have not attended kindergarten⁶; one presumable reason is the explosive expansion of state subsidized kindergarten in nearly every state in the 1940s through the 1970s followed by a quick introduction to federally funded preschool programs in 1965 (Butler, Gish, & Shaul, 2004). One study, however, shows clear correlational links in kindergarten attendance and outcomes at high school graduation.⁷ Prince, Hare, and Howard (2001) examined ACT performance, GPA, and other outcomes for children who did not attend kindergarten, attended public kindergarten, and attended non-public kindergarten in Mississippi (see Table 1), which was the last state among 50 to subsidize kindergarten, not doing so until 1986 (Dhuey, 2011). Prince et al. found a correlation between that kindergarten attendance (both non-public and public) and ACT achievement: students who attended kindergarten of either type had higher composite scores on the ACT; higher scores on each of the math, English, and science ACT

⁶ Dhuey notes that kindergarten research is mostly full-day versus half-day kindergarten programs and pre-kindergarten to kindergarten transitions. My struggles to find kindergarten enrollment versus non-enrollment concur.

⁷ Howard's doctoral dissertation in 1986 also compares outcomes for children who attended kindergarten and those who did not. While this paper is unpublished, an ERIC description notes that she found that students who attended kindergarten outperformed those children who did not attend kindergarten in academic achievement for grades one through three. (<http://eric.ed.gov/?id=ED321849>)

subjects; and higher cumulative GPAs. Whether a student attended non-public or public kindergarten had no effect on these results. The authors found no statistically significant difference among these students in ACT registration (which the authors tied to intent to pursue higher education), special education placement, or high school completion⁸.

Table 1. ACT and GPA data for students who attended public kindergarten, attended non-public kindergarten, and did not attend kindergarten.

Kindergarten Experience	Composite ACT ⁹	ACT Math	ACT English	ACT Science	Cumulative GPA
No Kindergarten	18.22	18.34	18.08	18.24	2.5
Public Kindergarten	20.65	20.19	20.52	20.27	2.85
Non-public Kindergarten	21.12	20.71	21.23	20.84	2.83
National Average ¹⁰	20.6	20.0	20.3	20.7	-

Source: Dhuey, 2011

2.1.2.2 Attendance & Absenteeism

Examining the effects of absenteeism on student outcomes further demonstrates the importance of kindergarten in a student's K12 career. Romero and Lee (2007) found that, on average,

⁸ The authors did not control for income in this study.

⁹ The highest possible score on the composite ACT and each subject area is 36.

¹⁰ Data for Prince et al.'s study (2001) was from children who were in first grade in 1979, 1980, and 1981. The national ACT average information provided is an average of scores from 1991, 1992, and 1993, the years when each first grade cohort would have taken the ACT as seniors in high school (NCES, 1998).

kindergarteners only missed five days of school, representing less than 3% of the standard 180-day school year. However, “one quarter of all kindergarten children were either at-risk or chronic absentees” (p. 1), missing between 12 to 18 days (6.6% - 10%) for at-risk students and over 18 days (10% or more) for chronically absent students. Children whose families’ incomes were above 300% of the federal poverty line (representing children eligible for free lunch) were four times more likely to be chronically absent than were children below 100% of the federal poverty line,¹¹ demonstrating a significant and striking difference in the absence rates of children from low- and high-income families.

In a study of four states’ absenteeism data in combination with Early Childhood Longitudinal Study – Kindergarten (ECLS-K) data, Balfanz and Byrnes (2012) report that chronic absenteeism, defined as a student missing 10% or more of school, follows a pattern. The percentage of chronically absent students is high in kindergarten (13% in their study), decreases throughout elementary school, and creeps higher again through middle school and high school, peaking in twelfth grade. Chang and Romero (2008) theorize that this curve indicates that families undervalue kindergarten, particularly in light of current educational practices and policies:

¹¹ For the 2013-2014 school year, a household of four is considered to be in poverty if its annual income is at or below \$23,550. A family of the same size is at 130% of the federal poverty line if its annual income is at or below \$30,615, qualifying a school-aged child in that family for free lunch. A family of the same size is at 185% of the federal poverty line if its annual income is at or below \$43,568, qualifying a school-aged child in that family for reduced lunch (Income eligibility guidelines, 2013).

Kindergarten has historically been viewed as a transition into formal education rather than the beginning of formal schooling. Many parents may not be aware of the changes that have occurred in schooling, especially with the onset of No Child Left Behind. This perception of kindergarten as optional is reflected by state compulsory education laws, which typically do not start until children are older, as well as the continued practice of only offering half-day kindergarten in many places. (p. 12)

If these authors are correct, then kindergarten is when parents begin fusing the connection between early learning and formal schooling and instill in their children good habits of regular school attendance. Generally, this change is reflected in a decrease in absenteeism rates after kindergarten: absenteeism rates for all students (including those who are not at-risk or chronically absent) decline for the majority of students from kindergarten through the elementary grades. However, many chronically absent children fail to improve their attendance, with more than one half of chronically absent kindergarteners graduating into chronically absent first graders (Romero & Lee, 2007), indicating that many children and parents are still not in the “habit” of school.¹²

¹² This comment is unassociated with SES.

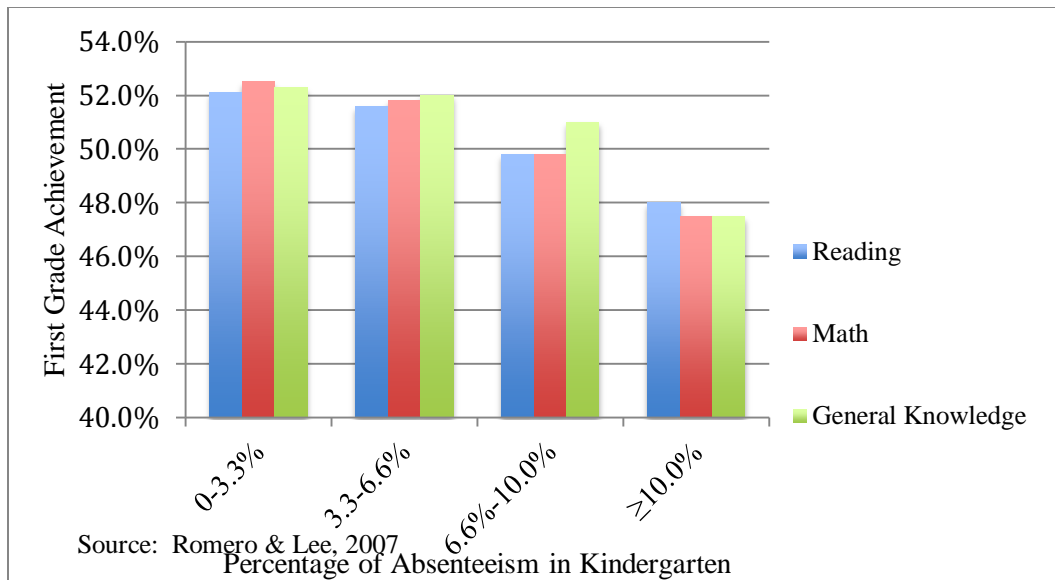


Figure 2. Kindergarten absenteeism and first grade achievement.

Low-income kindergarteners who are chronically absent are particularly at-risk for lowered educational outcomes (Romero & Lee, 2007). As previously discussed, children in the lowest SES quintile of the NCLS-K data arrived at kindergarten with substantially fewer school readiness skills than did their higher income peers, and low-income kindergarteners who miss many days of school lose valuable opportunities to gain those skills that would allow them to catch up. Romero and Lee (2007) found that kindergarten absenteeism was an especially effective predictor of first grade reading and math achievement of children from low-income backgrounds (see Figure 2).

Low-income students with perfect or nearly perfect attendance (0 – 3.3% absenteeism) are grossly outperformed in math by the averaged group of chronically absent kindergarteners (which includes children at the top of socio-economic spectrum). Chang and Romero (2008) note that high-income families are likely to have the resources necessary to supplement the experiences and education their chronically absent children may miss. Regular kindergarten attendance is important for all children, but it is especially important for children from low-

income families who enter school underprepared and have less availability to make up for their absences as compared to their higher-income peers.

2.1.2.3 Academic Gains

Kindergarten as the foundation for schooling: Pennsylvania's standards aligned system. In the Alliance for Children's report *Crisis in the Kindergarten: Why Children Need to Play in School* (Miller & Almon, 2009), authors state that "kindergarten has changed radically in the last two decades" (p. 11), noting that children in full-day kindergarten spend "four to six times as much time in literacy and math instruction and taking or preparing for tests...as in free play" (p. 11). In considering the demands placed on today's kindergarten students, Gullo and Hughes (2011) believe that "kindergarten is no longer the outsider but should be treated as a member of the 'graded' family" (p. 396). Pennsylvania seems to agree and has built a standards framework that demonstrates a progression of learning; for example, Pennsylvania has gone as far as to call the kindergarten through second grade standards the "K-2 Band" (Mathematics, n.d.; Writing, n.d.), emphasizing the importance of this interdependent group. The simplest example of this reliance on previously learned information is in mathematics standard strand 2.11:

- Kindergarten: "order whole numbers, 0 to 20, with least to greatest value"
(Mathematics, n.d.)
- Grade 1: "order whole numbers, 0 to 100, with least to greatest value"
(Mathematics, n.d.)
- Grade 2: "order whole numbers, 0 to 500, with least to greatest value."
(Mathematics, n.d.)

Even the difference in expectations from kindergarten to grade one and grade one to grade two is substantial, showing an expected growth in understanding of numbers as well as procedural capabilities.

Intervention. Many researchers (Chatterji, 2006; Cooper, Batts Allen, Patall, & Den, 2010; Lee, Burkham, Ready, Honigman, & Meisels, 2006) have demonstrated kindergarten's effectiveness in increasing children's academic skills to prepare children for first grade. It is important to note that kindergarten attendance has been shown to improve outcomes for all children and does not automatically close the gap between low- and high-income children (Cooper et al., 2010; Lee et al., 2006).

This suggests that economically disadvantaged children need to attend kindergarten just to keep pace and may especially benefit from targeted programs. Blachman, Ball, Black, and Tangel (1994), for example, found that low-income kindergarteners who participated in a phoneme awareness training performed significantly better on an assessment of phoneme segmentation, letter names and sounds, reading, and spelling than did peers who had not participated in the training. Dyson, Jordan, and Glutting (2011) administered an eight-week number sense intervention program to low-income children to test effectiveness in raising counting skills, counting principles, number recognition, number knowledge, and other related skills. The authors found that children who received the intervention gained 29 percentage points in their total percent correct on a math test, while those children who did not receive the intervention only gained 18 percentage points. Higher-income children come into kindergarten with far more skills in both reading and math than did the SES populations who received interventions in the studies of Blachman et al. (1994) and Dyson et al. (2011). As kindergarten raises achievement for all children across the SES spectrum, this kind of targeted intervention on

top of regular kindergarten enrollment and attendance may be necessary to get low-income children up to pace with their peers.

2.1.2.4 Research Findings: Full-Day Versus Half-Day Kindergarten

Academically, socially, and emotionally, full-day kindergarten provides greater benefits to students as compared to half-day kindergarten (Cooper et al, 2010; Cryan et al., 1992; Lee et al, 2006; Elicker & Mathur, 1997). Lee et al. (2006) used 1998 ECLS-K data to examine the academic outcomes differences between full-day and half-day kindergarten both generally for all children and specifically for children of different socio-economic classes. The authors compared math and literature data from when students entered kindergarten against tests administered at the end of the school year,¹³ and in doing so found that students who attended full-day kindergarten had far greater academic gains than did those students who attended half-day kindergarten:

Results are clear: when children's social and academic backgrounds are taken into account, as well as structural, social, and academic features of their schools, children who experience full-day kindergarten as a whole-school program are advantaged in terms of their cognitive learning (effects of 0.93 between school standard deviation in literacy and 0.75 between-school standard deviation in mathematics). (p. 195)

The authors note that, in comparing amount of time that teachers spent on academic tasks, they expected full-day kindergarten to simply be a “double-dose” of half-day kindergarten; instead, full-day teachers only spent 30% more time on reading and language arts instruction and

¹³ The authors note that the average time between tests was 6.2 months and thus not a calculation of all knowledge learned over the typical 9.5 month year.

46% more time on math instruction, not enough time to produce double the academic gains as presented.

In a meta-analysis of 40 research studies comparing full-day to half-day kindergarten, Cooper et al. (2010) confirmed Lee et al.'s findings (2006): "*at the end of the kindergarten year, children who attend full-day programs perform better on tests of academic achievement than children who attend only half-day programs*" (p. 61¹⁴). Authors found that this correlation was even stronger for kindergarteners in urban communities as compared to children attending kindergarten in nonurban communities, noting that this "indirect evidence [suggests] a potentially greater impact for full-day kindergarten for poorer children" (p. 63).

Cryan et al. (1992) and Elicker and Mathur (1997) also found that children who attended full-day kindergarten had greater academic gains than did children who attended half-day kindergarten. These authors, however, also elaborated on other child outcomes. In analyzing academic and behavioral results of 27 school districts in two cohorts, Cryan et al. (1992) found that children in full-day programs had better behavior than did their half-day peers as evaluated by a standardized teacher evaluation tool (the Hahnemann Elementary School Behavior Rating Scale), which was administered in the winter of students' first grade year: "Analysis of variance ... shows significant differences related to schedule for originality, independent learning, involvement in classroom activities, productivity with peers, intellectual dependency, failure/anxiety, ... and approach to teacher" (p. 193). Also, longitudinally, these students experienced fewer grade retentions.

Elicker and Mathur (1997) conducted a two-year study of 12 separate kindergarten classes in a middle-class community in the Midwest. The authors found that children in full-day

¹⁴ Italics belong to Cooper et al. (2010)

classes “showed a consistent advantage” (p. 476) for both standard academics (literacy, math, and general learning) as well as social skills:

We concluded that for many children in this economically-stable, middle-class community, participation in a full-day kindergarten program provided an enjoyable and developmentally-appropriate experience, with some academic and developmental advantages over the traditional full-day program. (p. 478)

Lee et al. (2006) note that early childhood specialists would find these results particularly valuable in making the case for full-day kindergarten. Authors also note that although full-day kindergarten is more common in low-income school districts than in higher-income school districts, it does not serve to “close the gap.” That is, according to the Lee et al.’s findings, all children regardless of socioeconomic status achieve similar academic gains when enrolled in full-day kindergarten.

2.1.3 Demographics Changes – Implications for Kindergarten

Reardon (2011) notes that as the income gap has grown between high- and low-income families over the past years, so has the achievement gap between these two groups. This is worrisome when examining trends of children eligible for free or reduced lunch; both nationally and within Pennsylvania, more and more children are falling to the low end of the SES spectrum (NCES, 2011; PA Department of Education, 2006; PA Department of Education, 2008; PA Department of Education, 2010; PA Department of Education, 2012). Eligibility for free and reduced lunch has grown nationally by almost 10% in the last nine years (NCES, 2011).

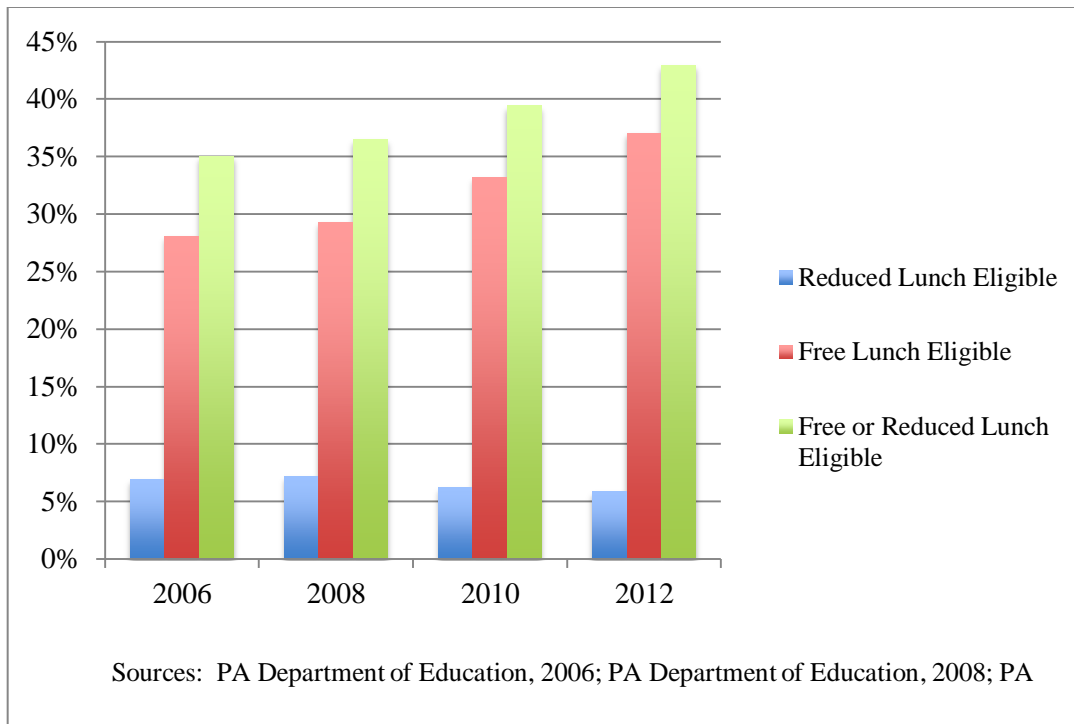


Figure 3. Percentage of students eligible for free and reduced lunch in Pennsylvania public schools from 2006 to 2012 (select years).

Pennsylvania's free and reduced lunch data paint a particularly grim picture: although the number of children eligible for reduced lunch has gradually decreased since 2006, the number of children eligible for free lunch has consistently risen, as has the overall number of children eligible for either lunch program (see Figure 3). Beginning in 2008, nearly one third of Pennsylvania's children were living in poverty, a figure that has only increased – and steadily.

These demographic changes, in combination with kindergarten readiness data, suggest that as more children qualify as low-income or living in poverty, more children will be entering kindergarten who are underprepared for school as compared to their peers. Low-income children and those living in poverty face substantial inequities that begin when they first enter the world, making them less prepared to enter school than their higher-income peers, establishing a wide academic gap before the first school bell ever rings. Because kindergarten is nearly universal,

low-income children may need interventions to help narrow the gap and make them more prepared for first grade. Kindergarten is no longer just a stepping-stone on a child’s way to first grade; it has become a critical step that all children need in order to be successful throughout their K-12 education.

2.2 FULL DAY KINDERGARTEN

2.2.1 Kindergarten Mandates

2.2.1.1 Nationwide

Table 2. States' requirements of school districts to offer kindergarten, by compulsory status.

State Requirement of School Districts	Compulsory Status		Total
	Yes	No	
Half-day	7	27	34
Full-day	8	3	11
No requirement	-	5	5
Total	15	35	50

Even though kindergarten attendance is compulsory in only 15 states, 45 states mandate that school districts provide some kind of kindergarten program (Education Commission of the States, 2013). Table 2 shows states’ school district requirements of offering full-day, half-day, or no kindergarten, paired with their current compulsory attendance status (see appendix A for a list of all states’ compulsory statuses and school district requirements). A total of 34 states

(including both those with and without compulsory attendance mandates) require their districts to provide at least a half-day option for students, and another 11 states require all school districts to provide full-day kindergarten, including three states that do not require children to attend kindergarten.

2.2.1.2 Pennsylvania

Statistics show that Pennsylvania families enroll children in kindergarten without it being compulsory; in fact, kindergarten enrollment in the state has increased by more than 8,000 in the past eight years (Kids Count, n.d. b). Pennsylvania is one of just five states not requiring school districts to provide any kindergarten at all (ECS, 2013)¹⁵, and state budget cuts have put some of Pennsylvania's school districts under enough financial duress that they have considered cutting kindergarten, even in schools nearest the state's capital (Long, 2012). That said, every school district in the state does provide at least a half-day program, with the majority of school districts providing a full-day option (Kids Count Data Center (n.d. a), and the Pennsylvania Department of Education has no knowledge of any district planning to eliminate kindergarten for the 2014-15 school year (Miller, 2013).

¹⁵ The other four states are Alaska, Idaho, New Jersey, and New York.

2.2.2 The Growth of Full-Day Kindergarten

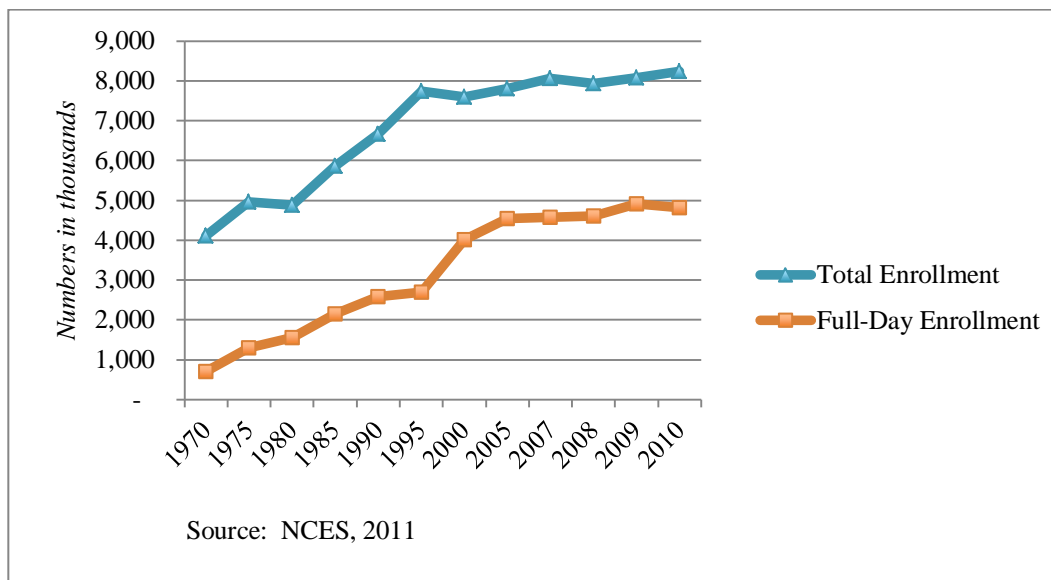


Figure 4. Change in kindergarten enrollment from 1970 to present (national).

Nationally, kindergarten enrollment has more than doubled since 1970, and full-day enrollment has increased in similar numbers (NCES, 2011) (see Figure 4). In 1970, full-day kindergarten was just 17% of total kindergarten enrollment; today, it is 76.1% (Child Trends, 2013).

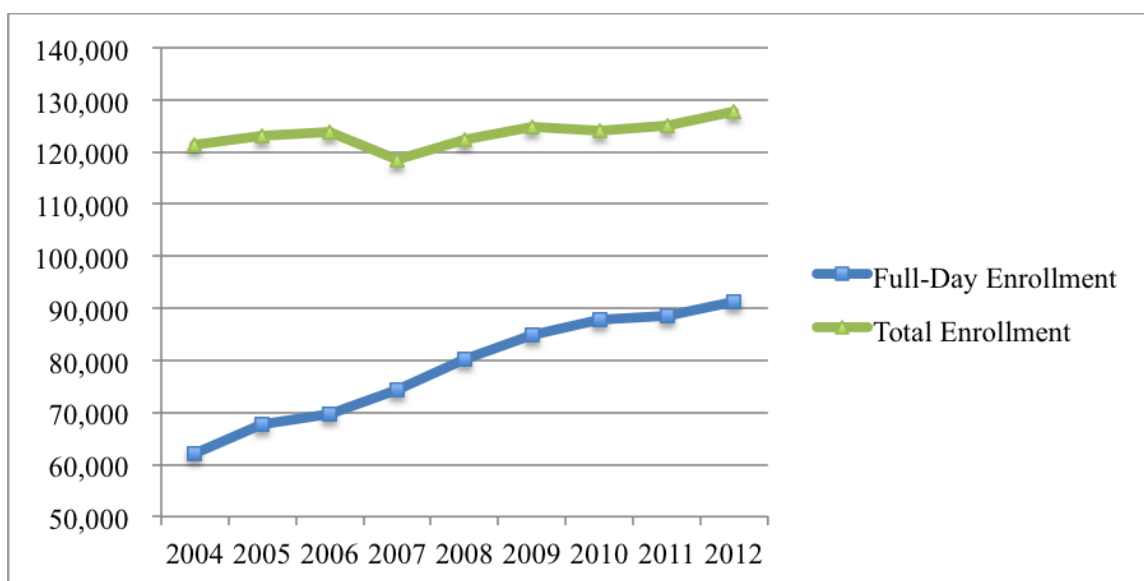


Figure 5. Change in kindergarten enrollment from 2004 to present (Pennsylvania).

In Pennsylvania, total kindergarten enrollment in Pennsylvania has increased by 8,148 in the past nine years, and full-day enrollment has increased by more than 29,000 (see Figure 5). As kindergarten enrollment is not state mandated, nor is enrollment in a full-day program, yet 71.5% of all kindergarteners were in a full-day program in 2012 (KidsCount, n.d. a). Ninety-three percent of school districts across the state offered full-day kindergarten in the 2012-2013 school year through a combination of funding streams and frugal spending¹⁶ (Children's Defense Fund, 2013), but without any state guaranty of funding, parents' new worry is that they will have fewer options for kindergarten.

2.2.3 Kindergarten in Pennsylvania

2.2.3.1 The Accountability Block Grant

School districts are not required to itemize their spending at the individual grade level, and as Pennsylvania does not require districts to operate a kindergarten program, there is no specific funding for it in the general education fund (PPC, 2002). As such, the main source of funding for full-day kindergarten in Pennsylvania has been the Accountability Block Grant (ABG), which former Governor Ed Rendell wrote into Pennsylvania's 2004-2005 budget (Pennsylvania Office of the Budget, 2004). The ABG helped raise full-day kindergarten enrollment by 91% in Pennsylvania, and in the 2008-2009 school year, two out of every three full-day kindergarteners were financed by the ABG (PPC, 2011) (see Appendix B).

¹⁶ In York City Schools, teachers and administrators took a pay freeze in 2011-2012 to afford to maintain full-day kindergarten in the school district (Mason, 2012).

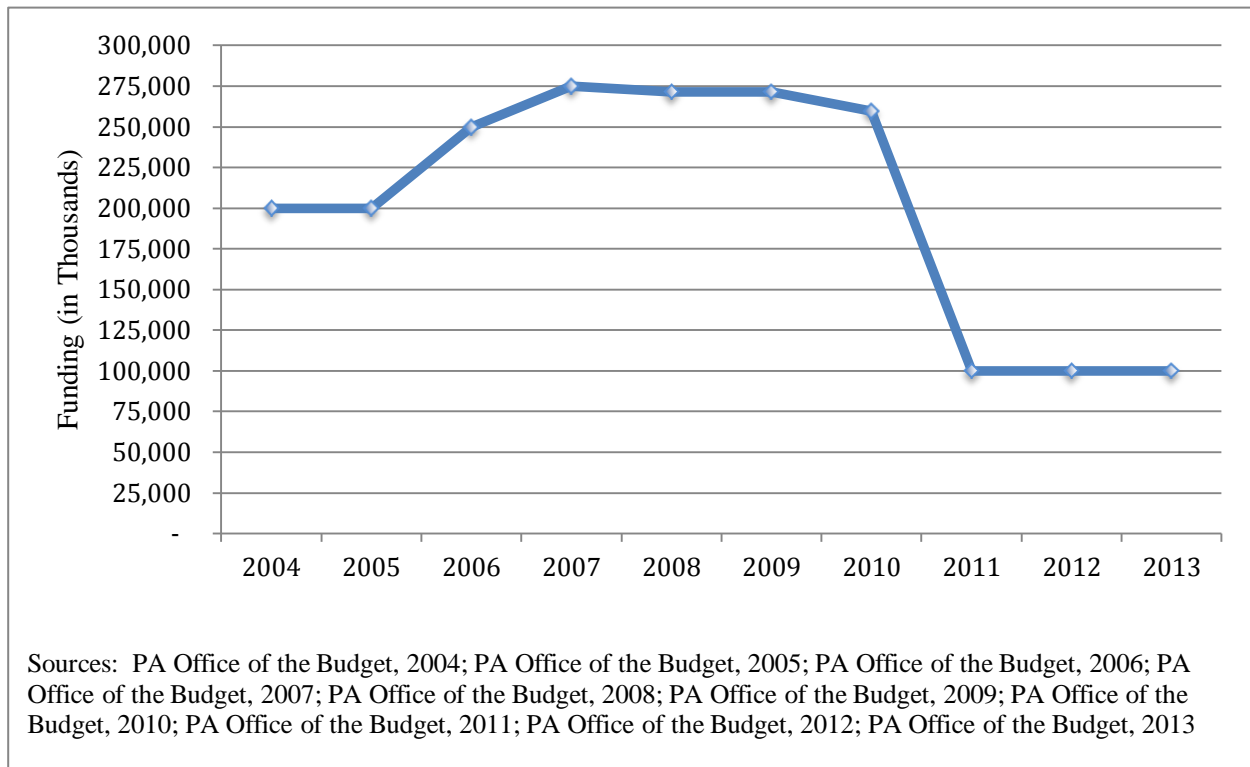


Figure 6. ABG funding from 2004 to 2013.

The Accountability Block Grant was initially funded by Pennsylvania legislature at \$200 million (PA Office of the Budget, 2004). Between 2004 and 2007, ABG funding increased (PA Office of the Budget, 2004; PA Office of the Budget, 2005; PA Office of the Budget, 2006; PA Office of the Budget, 2007); note that full-day kindergarten enrollment grew as ABG funding grew. Governor Tom Corbett initially cut the entire ABG in his 2011 budget proposal (PA Office of the Budget, 2011), but it was renewed at \$100 million after the budget was released (see Figure 6). While the official state budget lists ABG funding as zero dollars, the Pennsylvania Budget and Policy Center (2011) notes that “the \$100 million is actually part of the 2010-11 budget, so this amount does not show up in the “official” 2011-12 totals”. (para 8). ABG funding has held steady at \$100 million for the past two fiscal years (PA Office of the Budget, 2012; PA Office of the Budget, 2013).

Full-day kindergarten as a percentage of total kindergarten enrollment decreased by 0.1% the year that the Accountability Block Grant was slashed (KidsCount, n.d. a), and big cuts across the entire 2011 education budget (including a 61% cut in ABG funding) led school districts to tighten their fiscal belts (Hardy, 2011; Pennsylvania State Educators Association (2013). Many school districts sacrificed to keep full-day kindergarten despite having less than half the funding they once enjoyed. Such sacrifices include increasing class sizes, cutting afterschool programs, and reducing electives (Hardy, 2011) and even still, many administrators were forced to cut full-day programming back to half-day (Pennsylvania State Educators Association, 2013).

2.2.3.2 Parents' Responses to Eliminated Programs

In early 2013, Representative Pat Harkins (D-1) introduced a bill (H.B. 1344) that would “require all Pennsylvania school districts to offer kindergarten to children ages four through six and require students to start school by the age of six” (Harkins, 2013, para. 4). In his op-ed piece in *The Patriot-News* (serving central Pennsylvania), he recognizes the sacrifices that districts have had to make in scaling down full-day kindergarten and that “some districts are struggling to even maintain their half-day programs” (para. 7).

Fortunately, families in Pennsylvania have not yet had to respond to losing kindergarten altogether, and even for those programs that have been reduced, very little information is publicly available about how parents have actually dealt with cuts to kindergarten programs (in my research, newspaper articles proved to be the best informational source for personal opinions and experiences). One parent from Arizona described her inability to afford the fee her local district put in place for families wanting to send their child to the full day version of kindergarten (Leu, 2013). The parent described how modestly her family was living and how she planned on sending her daughter to a neighboring school to attend kindergarten for the full school day.

Thankfully for this parent, the article that included her interview was reporting the school district's decision to reinstate fully funded full-day kindergarten.

Another parent from Long Island, New York, described her frustration in having “to pay for 10,000 dollars for a private full day kindergarten” after her local school district decided they could not afford full-day kindergarten and then gave administrators large salary raises (Thorne, 2013). The mother, while angry, was apparently able to afford this cost on behalf of her child; the mother from Arizona was anxious and unable to afford even a supplementary fee to ensure her child had access to a whole day of kindergarten instruction.

While these two articles quite aptly highlight the differences in how families from different socio-economic statuses approached their children not being able to attend the full-day kindergarten program upon which they had counted, they are in the minority of texts. The majority of newspaper articles and similar media contain pleas from parents for legislators and administrators to maintain or return full-day kindergarten, not for their own convenience or financial stability, but because parents knew how valuable a full-day program is for their children (Carpenter, 2003; Miller, 2013; Vince, 2012), a sentiment that is echoed in the aforementioned Arizona parent's desperation to come up with another option for her child (Leu, 2013).

2.2.4 Looking Ahead: Full-Day Kindergarten in Pennsylvania's Future

Nationwide, parents and legislators alike know the importance of kindergarten: parents signify their understanding by enrolling children in kindergarten even without mandate, and most states require school districts to offer some kind of kindergarten program. Those states that require districts to offer full-day kindergarten have even more fully grasped the power that an entire day

of instruction can have in a young learner's life, both academically and personally. While Pennsylvania has yet to make any sort of law or provision regarding kindergarten enrollment or the availability of kindergarten, school districts have been able to provide at least half-day programs to students without interruption. The Accountability Block Grant allowed districts to expand full-day kindergarten considerably, but this funding is not guaranteed. In recent years, many school districts have struggled to provide even half-day kindergarten programming for students (Long, 2010; Mason, 2012). Woodland Hills School District scaled back their bussing in order to provide kindergarten in 2011-2012 (Frantz, 2012). The District's director of operation services noted an article in *The Patriot News* that they would have to look for additional cuts for the following year (Frantz, 2012).

As full-day kindergarten continues to gain popularity (which trends in growth of full-day kindergarten as a percent of all kindergarten enrollment suggest it will), Pennsylvania will be putting its children at risk without policies that show a commitment to students' earliest learning experiences. Currently, full-day kindergarten is widespread throughout low-income communities (including urban school districts in Allegheny County and Philadelphia and rural communities across the state), and so many families and children have not needed to worry much about the fact that kindergarten of any kind is not yet required in Pennsylvania. However, with full-day kindergarten becoming the new national norm and Pennsylvania behind in educational legislation, parents may soon have reason to become concerned over the state's lack of commitment to their children's best interests.

2.3 GAPS IN LITERATURE

To date, no research exists on a macro level about how Pennsylvania's education policies (particularly the compulsory schooling age and the lack of a policy requiring school districts provide kindergarten of any kind) affect school districts' abilities or decisions to provide kindergarten. Additionally, no research exists about how school districts negotiate resources enable to provide kindergarten, especially full-day kindergarten.

3.0 METHODS

3.1 DESCRIPTION OF CREATED CATEGORIES

The research methodology is twofold: a brief trend analysis of kindergarten enrollment correlated with Accountability Block Grant (ABG) and a qualitative analysis of survey data from Pennsylvania superintendents. Throughout both the trend analysis and the qualitative analysis, school districts were organized into categories based on socio-economic status (SES) and full-day kindergarten enrollment.

To categorize SES, school districts were organized based on the percentage of students who qualified for free/reduced lunch as a means of describing the general socio-economic status (SES) of students served by that district. School districts with zero to 25% of students qualifying for free/reduced lunch were categorized as highest SES, school districts with 25.1% to 50% of students qualifying for free/reduced lunch were categorized as high SES, school districts with 50.1 to 75% of students qualifying for free/reduced lunch were categorized as low SES, and school districts with 75.1% of students or greater qualifying for free/reduced lunch were categorized as lowest SES. Although any category was assigned with respect to the specific year in question (e.g., a description of a school district in 2004 was made using free/reduced lunch data from 2004), free/reduced lunch categories tended to remain constant from year to year. All

free/reduced lunch information used to inform survey data were taken from 2013-2014 school year records.

School districts were also organized according to the percent of children within a district who were enrolled in full-day kindergarten. School districts with zero to 50% of students enrolled in full-day kindergarten were categorized as half-day, and school districts with more than 50% of students enrolled in full-day kindergarten were categorized as full-day. Initially, I created four categories divided into even quarters, but the extra divisions provided little difference in data analysis as compared to using just two categories, and having just two categories for kindergarten status (especially since SES is organized into four categories) provided data that was much easier to understand.

3.2 RESEARCH QUESTION ONE

In order to determine the current status of full-day kindergarten in Pennsylvania public schools, I first asked whether the participant's school district planned to offer full- or half-day kindergarten for the 2014-2015 school year. Each division was then asked questions about how that decision was made. Participants who indicated that their district intended to offer a full-day program were asked to indicate the importance of each of the following in deciding to offer full-day kindergarten (on a four-point Likert scale ranging from not important to very important):

- Money was available to offer full-day kindergarten
- Research indicates better outcomes for students who attend full-day kindergarten
- Parents/guardians wanted full-day kindergarten
- Academic outcomes as compared to years with half-day kindergarten

- Colleagues within the school district (other teachers, school board, etc.)
- Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)
- Other (please describe)

Participants who indicated that their district intended to offer a half-day program were asked to indicate the importance of each of the following in deciding to offer half-day kindergarten (on a four-point Likert scale ranging from not important to very important):

- Money was not available to offer full-day kindergarten
- Research does not support lasting effects of full-day kindergarten
- Parents/guardians wanted half-day kindergarten
- Academic outcomes as compared to years with full-day kindergarten
- Colleagues within the school district (other teachers, school board, etc.)
- Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)
- Other (please describe)

To analyze data, I constructed pivot tables in Microsoft Excel that organized responses within SES categories. I then compared and reported data as a whole and by SES category. I also organized text and “other” responses into major categories. Policy patterns were interpreted according to trends.

Additional questions regarding supplementary child care were included in the survey for participants who indicated that their district planned to provide half-day kindergarten (see Appendix C). While the questions are related to the status of full-day kindergarten in Pennsylvania, they go beyond the scope of research questions of the thesis at this point.

3.3 RESEARCH QUESTION TWO

To determine what school districts need in order to provide full-day kindergarten to children, I first conducted a limited trend analysis of kindergarten enrollment from school year 2003-2004 to school year 2013-2014 as compared to Accountability Block Grant (ABG) funding since the inception of the program in fiscal year 2004 (source) to determine what, if any, trend has existed between funding and full-day kindergarten enrollment. Historical records of kindergarten enrollment data were collected from the Pennsylvania Department of Education's website of data and statistics (source). I categorized school districts using free/reduced lunch (as an indicator of socio-economic status) and percentage of students in full-day kindergarten, data which was all obtained from the Pennsylvania Department of Education's website. Free/reduced lunch data was available beginning with school year 2005-2006, and so these figures were also used in the two previous school years' categorization, for which no specific records are available.

I attempted to contact the Pennsylvania Department of Education multiple times via email and phone to obtain data about Accountability Block Grant usage; however, despite these efforts, I was unable to collect any such data. Historical records of ABG funding were retrieved from the Pennsylvania State Budget Office's website (www.budget.state.pa) beginning with the ABG's inception in 2002.

I first compared state enrollment of full-day and half-day kindergarten with the ABG. I then compared full-day and half-day enrollment by school district, categorizing school districts according to the percentage of students on free/reduced lunch during that year. The enrollment number for both full-day and half-day kindergarten was recorded, and the percentage of each program with regards to total kindergarten enrollment was calculated. I added information

collected from survey data for the 2014-2015 school year, recognizing the limits of this addition, given the slight overrepresentation of the high (second) SES category.

To examine current data, survey respondents were asked about their needs in providing full day kindergarten. Participants who indicated that their school district intends to provide full-day kindergarten in the 2014-2015 school year were asked to respond to the following question: “Many school districts have faced financial pressure to cut back to half-day kindergarten. What has been your experience with such pressures?” Respondents were able to choose multiple given options, including an “other” option, which, if chosen, they were asked to describe. Participants who indicated that their school district intends to provide half-day kindergarten in the 2014-2015 school year were asked to respond to the following question: “If money were not a factor, would you provide full-day kindergarten?” Responses ranged from “Yes, to all students” to “No, there is not a need for full-day kindergarten in our district.”

Data for both sets of respondents (full-day and half-day) were organized into pivot tables according to SES categories. I then compared and reported data as a whole and by SES category.

3.4 RESEARCH QUESTION THREE

In order to determine how a state policy of compulsory kindergarten attendance in Pennsylvania might affect school districts, I asked all participants to respond to the following questions:

- Does your district notify parents/guardians of this policy?
- To the best of your knowledge, how many parents choose not to enroll students in kindergarten?
- Does your district agree with this policy?

- How does this policy impact your district's decision to provide full- or half-day kindergarten?

Data was analyzed question by question using pivot tables, organized in sum and by SES category. Data regarding a district's agreement with the policy was cross-compared with data regarding the policy's impact on a district's decision to provide full- or half- day kindergarten.

3.5 SAMPLE POPULATION AND PENNSYLVANIA SCHOOL DISTRICTS

3.5.1 Sample Collection

My research study explores decision making at the school district level, and, as superintendents interact with a great number of diverse stakeholders (a school board, principals, other school leaders, parents/guardians, et cetera) and have great decision-making power, these school leaders are the most appropriate person to respond to the kinds of questions asked on the survey. My goal was to distribute a survey to the superintendent of each of Pennsylvania's 499 school districts. Pennsylvania actually has 500 school districts, but Bryn Athyn School District in Montgomery County does not operate any public schools was not included in the survey blast. I obtained superintendents' names from Pennsylvania's education names and addresses website (www.edna.ed.state.pa.us) and then created a working list of superintendent email addresses through a collection of individual website searches, PDE documents, and other sources. I then separated the school districts into Pennsylvania's 29 intermediate units and emailed each respective list to the executive administrative assistant of 27 intermediate units, not including the Pittsburgh Intermediate Unit or the Philadelphia Intermediate Unit, which each represent just

their own school district. Of the 27 remaining intermediate units that I emailed, 22 responded. Two responders told me that policy prohibited them from completing my request, but the other 20 either confirmed or edited my initial contact list. For the seven intermediate units who did not respond or were unable to confirm contact information, I tried to confirm information through individual school district websites.

Through this process, I obtained contact information for each of Pennsylvania's 499 superintendents in school districts that operate kindergarten programs. Contact information was collected for both the superintendent and an additional senior level executive in the Pittsburgh Public Schools and the Philadelphia Public School District, the two largest districts in the state. I researched any records I learned to be incorrect through checking school districts' websites, emailing administrative assistants, and calling school districts directly.

The first survey blast was emailed on June 12, 2014. Of that blast, 27 emails were returned as failed email addresses, 93 surveys were completed, and 11 recipients opted out of the survey. A second blast was emailed on June 23, 2014. Of that blast, zero emails were returned as failed email addresses, and 43 surveys were completed. In between blasts, I researched email addresses that were marked as failed. A third survey blast was emailed on July 3, 2014. Of that blast, zero emails were returned as failed email addresses, and an additional 26 surveys were completed. In total, 162 surveys were completed.

3.5.2 Description of School Districts

To determine sample's representativeness of the state, I gathered state-level data regarding school districts' SES and kindergarten enrollment, which was compared against the same information of the population.

Table 3. Distribution of Pennsylvania school districts by full-day kindergarten enrollment and free/reduced lunch eligibility (per 2013-2014 records).

SES Category	Total		FDK Enrollment			
			0-50%		50.01-100%	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Highest	101	20.20%	66	13.20%	35	7.00%
High	278	55.70%	43	8.60%	235	47.10%
Low	99	19.80%	8	1.60%	91	18.20%
Lowest	21	4.20%	4	0.80%	17	3.40%
Total	499	100.00%	121	24.20%	378	75.80%

Table 4. Distribution of sample school districts by full-day kindergarten enrollment and free/reduced lunch eligibility (per 2013-2014 records).

SES Category	Total		FDK Enrollment			
			0-50%		50.01-100%	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Highest	28	17.3%	18	60.0%	10	7.6%
High	100	61.7%	11	36.7%	89	67.4%
Low	29	17.9%	1	3.3%	28	21.2%
Lowest	5	3.1%	0	0.0%	5	3.8%
Total	162	100.0%	30	100.0%	132	100.0%

Pennsylvania school districts. At the close of the 2013-2014 school year, Pennsylvania operated 499 school districts with kindergarten programs (see Table 3). Over 75% of districts had the majority of students enrolled in full-day kindergarten (FDK), and over 75% of districts were in the highest two socio-economic status (SES) categories. When combining the two variables into a matrix, the greatest number of Pennsylvania school districts (47.1%) are in the high SES category and enroll the majority of their kindergarteners in a full-day program. Note that these figures refer to school districts, not the number of students within a district.

Description of sample. Of the 499 superintendents who received a survey invitation, 162 participated (see Table 4). Like the population, the greatest number of the sample school districts (54.9%) are in the high SES category and enroll the majority of their kindergarteners in a full-day program (using FDK enrollment and free/reduced lunch (FRL) eligibility data from the 2013-2014 school year).

Table 5. Sample misrepresentation of population (absolute value).

SES Category	Total	FDK Enrollment	
		0-50%	50.01-100%
Highest	3.0%	2.1%	0.8%
High	9.7%	1.8%	7.8%
Low	1.9%	1.0%	1.0%
Lowest	1.1%	0.8%	0.3%
<i>Total</i>	<i>15.7%</i>	<i>5.7%</i>	<i>10.0%</i>

Representativeness of population. The sample created by those who responded to the survey invitation is largely representative of the total population of school districts in terms of both full-day kindergarten enrollment and SES categories. The greatest variance is in those school districts in which the majority of students are enrolled in full-day kindergarten and the high free and reduced lunch eligibility category with an over-representation of 7.8% (see Table 5).

3.5.3 Description of Participants

Table 6. Age of participants.

Range	<i>n</i>	% (of 162)
30-39	7	4.3%
40-49	50	30.9%
50-59	75	46.3%
60+	30	18.5%

Participants' ages ranged from 33 to 71, with the mode age being 55 (see Table 4). Two thirds of participants were male (n=108), and one third were female (n=54). Nearly all participants identified themselves as white/Caucasian (n=159), with the remaining participants identifying themselves as African-American (n=2) or multiple races (n=1) (see Table 6).

Table 7. Position of participants.

Title	<i>n</i>	% (of 162)
Superintendent (or Acting Superintendent)	151	93.2%
Assistant Superintendent	4	2.5%
Elementary School Principal	4	2.5%
Director of Curriculum, Instruction, or Other Specialized Department	3	1.9%

Table 8. Participants' years of experience teaching young children.

Experience	Pre-School		Kindergarten		1 st Grade	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
0 Years	156	96%	140	86%	140	86%
1-3 Years	3	2%	16	10%	14	9%
3+ Years	2	1%	5	3%	7	4%

While the intended audience of the survey was superintendents, a few other school leaders responded to the survey (see Table 7). Participants' total years of experience in their current position ranged from just six months to 30 years, with a mode of three years. Nearly half of all participants had less than five years of experience, with an additional 30% having between five and nine years of experience. One hundred seventeen participants have been at their current school district for the entire time they have assumed their current title. Of the 45 participants who have changed school districts since assuming their current title, 57.8% have been in their current school district for four years or fewer, 31.1% have been in their current district for five to nine years, and 11.1% have been in their current district for more than 10 years. Very few participants had experience teaching young children, with just 13% of all participants ever

having taught kindergarten or first grade, and just 3% of participants ever having taught pre-school (see Table 8).

4.0 RESULTS AND INTERPRETATIONS

This chapter primarily describes the results of the study. It is organized by research question, first presenting relevant data and then presenting an interpretation of the data. The majority of Pennsylvania school districts plan to provide full-day kindergarten for the 2014-2015 school year, but many are negotiating financial conditions in order to do so. Of those school districts providing half-day kindergarten, nearly all are in the highest SES category. Availability of funds, namely, the Accountability Block Grant, has historically correlated with the percentage of students enrolled in full-day kindergarten within a school district, and finances continue to be the determining factor for many school districts today. Pennsylvania's compulsory school age policy has little influence over kindergarten enrollment or a school district's decision to provide half- or full-day kindergarten.

4.1 RESEARCH QUESTION ONE

4.1.1 Kindergarten for the 2014-2015 School Year

Table 9. Sample's intended kindergarten programming for 2014-2015 school year.

Kindergarten Type	Total (n=162)		SES Category							
			Highest (n=28)		High (n=100)		Low (n=29)		Lowest (n=5)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Full-Day	134	82.70%	12	42.90%	90	90.00%	27	93.10%	5	100.00%
Half-Day	28	20.90%	16	57.10%	10	10.00%	2	6.90%	0	0

82.7% of all participants indicated that their school districts intend to provide full-day kindergarten for the 2014-2015 school year. All school districts in the lowest SES category plan to offer full-day kindergarten, with that percentage decreasing as school district SES increases (see Table 9). The highest SES category had the greatest percentage of school districts planning to provide half-day kindergarten, with over half of all respondents from that category indicating their intent to provide half-day. The majority of school districts in both the low and high SES categories intend to provide full-day kindergarten to students, with a small percentage in each planning to provide half-day. No school districts in the lowest SES category indicated that they will provide half-day kindergarten. Four participants through text options and/or private email stated that their districts offer a combination of half- and full-day programs. Of those, two stated that the full-day programs were between one and three classrooms of students that were only available to academically qualifying students. In response to the question, “Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?” three participants selected half-day and one selected full-day. These participants are not considered separately throughout

the rest of this report, although their comments raise interesting questions about decision-making among districts that utilize a dual-program kindergarten model.

4.1.2 Kindergarten Programming Decision Making

Full-day kindergarten. When asked to indicate the importance of given items in deciding to offer full-day kindergarten, participants identified the following items to be somewhat important or very important at a total percentage of 85% or higher (see Table 11):¹⁷

- Research indicates better outcomes for students who attend FDK;
- Academic outcomes as compared to years with half-day kindergarten;
- Money was available to offer FDK; and
- Parents/guardians wanted FDK.

¹⁷ See Appendix D for a more complete representation of results.

Table 10. Participants' indication of given factors as "somewhat important" or "very important" (full-day kindergarten).

Factors	Total (n=134)		Highest (n=12)		High (n=90)		Low (n=27)		Lowest (n=5)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Money was available to offer FDK	115	85.8%	11	91.7%	75	83.4%	24	88.9%	5	100.0%
Research indicates better outcomes for students who attend FDK	131	97.7%	11	91.7%	89	98.9%	27	100.0%	4	80.0%
Parents/guardians wanted FDK	114	85.0%	10	83.4%	77	85.5%	23	85.1%	4	80.0%
Academic outcomes as compared to years with HDK	128	95.5%	10	83.3%	89	98.8%	26	96.3%	3	60.0%
Colleagues within the school district	94	70.1%	7	58.4%	63	70.0%	20	74.0%	4	80.0%
Colleagues outside of the school district	57	42.5%	5	41.6%	40	44.4%	9	33.3%	3	60.0%
Other	26	19.4%	2	16.7%	16	17.8%	4	14.8%	4	80.0%

The most highly regarded factors were the notion that research supporting full-day kindergarten and academic outcomes as compared to years with half-day kindergarten. Both of these items were identified as “somewhat important” or “very important” more than any other item by almost 10 percentage points. These items were especially highly regarded among the high and low SES categories, with agreement of importance near 100% across both categories and in both items. The availability of funds was more highly regarded in the highest and lowest SES categories than it was for the middle SES categories, which suggests that even those districts serving very wealthy communities may face similar financial challenges as school districts serving lower income communities when determining how to manage a budget to

provide the best academic experience for all students. Academic outcomes with full-day kindergarten as compared to half-day kindergarten received the lowest indication of importance in the lowest SES category. While this category represents just a few participants, this SES category has historically had the highest incidence of full-day kindergarten (as a percentage of total kindergarten enrollment), and so it is possible that participants responding to this question may not have any experience with half-day kindergarten, which could explain a lower importance rating for this item. Colleagues from both inside and outside of the district received modest indications of importance across SES categories, with those colleagues outside of the district having the least importance in decision making of any given item.

Interestingly, 19.4% of participants (n=28) indicated “other” as somewhat important or very important, although very few comments provided novel information that was not already mentioned in the given options. Instead, participants used this text option to restate what was most important among previously listed questions. The most common factor described (n=11; 39.3%) was a long-standing full-day program, which seemed to be related to parents/guardians and other stakeholders wanting full-day kindergarten. For example, one participant stated that full-day is considered a “property right” in that school district (survey data). Another restated factor was the belief that full-day kindergarten is best for students (n=5; 17.9%). New information about factors influencing the decision to offer full-day kindergarten included the school district having a large low SES population (n=5; 17.9%) and incoming students having limited access to pre-K (n=3). These ideas are all aligned with a strong belief in research supporting the effects of full-day kindergarten.

Table 11. Participants' indication of given items as somewhat important or very important factors in deciding to offer half-day kindergarten.

Factors	Total (n=28)		Highest (n=16)		High (n=10)		Low (n=2)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Money was not available to offer FDK	21	75.0%	10	62.5%	9	90.0%	2	100.0%
Research does not support lasting effects of FDK	10	35.7%	7	43.8%	3	30.0%	0	0.0%
Parents/guardians wanted HDK	8	28.5%	7	43.8%	1	10.0%	0	0.0%
Academic outcomes as compared to years with FDK	10	35.8%	6	37.6%	3	30.0%	1	50.0%
Colleagues within the school district	3	10.7%	2	12.6%	0	0.0%	1	50.0%
Colleagues outside of the school district	3	10.7%	1	6.3%	1	10.0%	1	50.0%
Other	12	42.8%	7	43.8%	4	40.0%	1	50.0%

Half-day kindergarten. Of given items, money was most commonly identified as important in school districts' decision to provide half-day kindergarten: three fourths of all participants identified this item as somewhat or very important (see Table 12).¹⁸ No other item was consistently identified as important among participants, either in sum or within specific SES categories. Fifty percent of participants representing school districts in the low SES category identified four separate given items as very important; however, as 50% represents just one participant, this choice was not further explicated in this report.

A combined 91.7% of all participants in the high and low categories identified the availability of funds as important in their school districts' decision to offer half-day kindergarten.

¹⁸ See Appendix D for a chart depicting full data results.

This supports the idea that for districts in these SES categories, providing half-day kindergarten is a result of limited or restricted funds.

42.8% of participants (n=12) indicated “other” as somewhat important or very important. Factors of a past practice of providing kindergarten (n=4; 33%) and the availability of funds (n=3; 25%) were restated from previous questions. Lack of space (n=3; 25%) was a newly mentioned item, however, it may be tied into finances in the long term. Three respondents repeated sentiments that money was a very important factor in deciding to offer half-day kindergarten; one participant commented, “the decision was solely financial” (survey data). One entirely new decision-making factor was identified (n=3; 25%): that a school district may have limited full-day kindergarten seats for identified students. In a private email, one participant stated that the school district uses an early risk factor profile in addition to an entrance test to qualify students for full-day kindergarten, even though the majority of students will enter half-day kindergarten.

4.1.3 Interpretation

Numerous factors related to the belief that full-day kindergarten is best for students support a district’s decision to offer this type of programming. A lack of funding, however, may be a primary factor in a school district’s decision to provide half-day kindergarten. Generally speaking, for those districts planning to provide full-day kindergarten, the decision is not based on finances; instead, it is based on research and academic outcomes and supported by the availability of funding and the wishes of parents/guardians. Many participants who indicated the provision of full-day kindergarten suggested that cutting back to half-day is simply not an option,

and to that extent, the availability of finances are not part of the decision-making process, an idea supported by the comments provided in the “other” section of this question.

Academic outcomes with full-day kindergarten as compared to half-day kindergarten received the lowest indication of importance in the lowest SES category. While this category represents just a few participants, this SES category has historically had the highest incidence of full-day kindergarten (as a percentage of total kindergarten enrollment), and so it is possible that participants responding to this question may not have any experience with half-day kindergarten, which could explain a lower importance rating for this item.

42.8% of all participants in the highest SES category indicated the importance of both parents’/guardians’ preference for half-day kindergarten and a lack of research to support academic effects in their districts’ decision to offer half-day kindergarten. This percentage represents just seven participants, however, and raises questions about the differences in how research is used and understood between school districts serving higher and lower communities.

4.2 RESEARCH QUESTION TWO

4.2.1 Trend Analysis

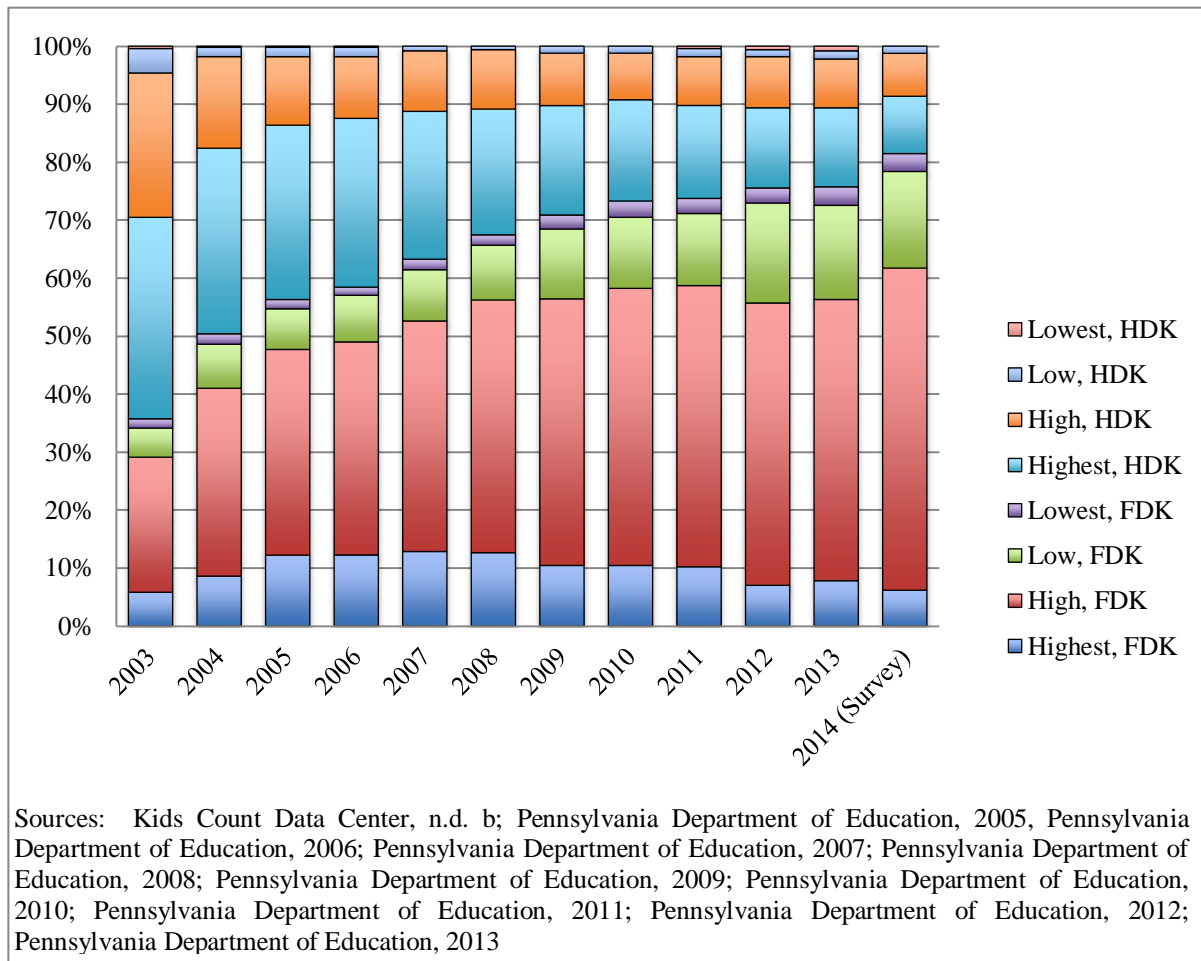


Figure 7. Change in kindergarten program type and SES from 2005 to present (Pennsylvania).

Figure 7 represents the change in full-day and half day kindergarten as well as the change in the distribution of socio-economic status of school districts from 2003 to 2014 (using survey data collected for this research study). Note that, as free and reduced lunch (FRL) data for the 2003-2004 and 2004-2005 school years was not publicly available, FRL data for the 2005-2006 school year was used to represent this variable for the two previous years. This Figure highlights the

shift in the number of schools in each SES category from year to year while comparing full-day enrollment within each category.

Overall, full-day kindergarten enrollment has increased substantially from 2003 to present, with the most significant growth during the first year of the ABG (in 2004), during which time, full-day kindergarten enrollment across Pennsylvania's public schools grew by more than 15 percent. Steady growth can be observed from 2003 to 2008, the year after ABG reached its peak. Total full-day enrollment leveled off beginning in 2008 through 2013. Full-day kindergarten enrollment across SES lines has remained somewhat stable since 2010, despite a drop in ABG funding in 2011.

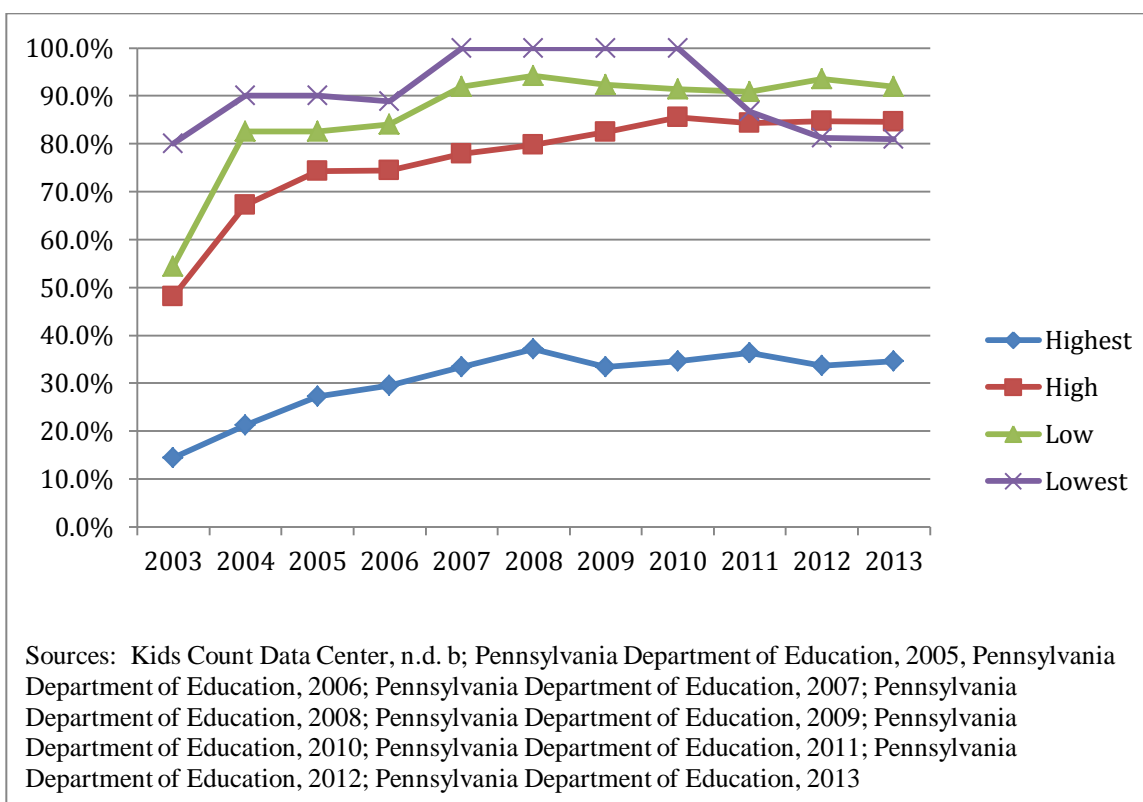


Figure 8. Change in full-day kindergarten enrollment from 2003 to 2013, by SES category (Pennsylvania).

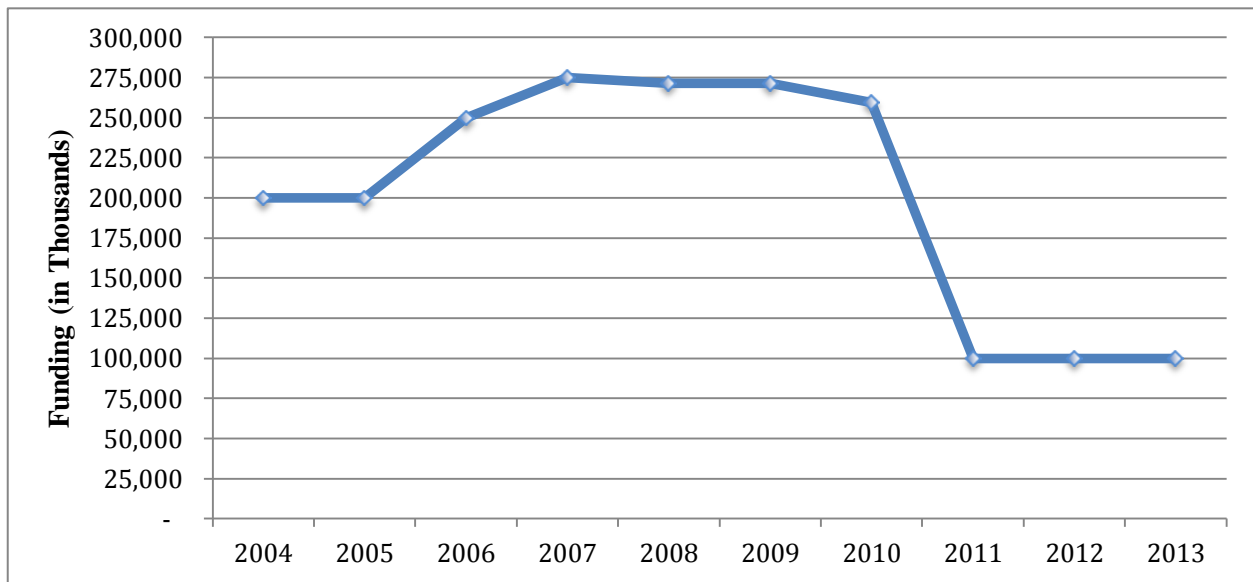


Figure 9. Change in ABG funding from 2004 to 2013 (repeated from Section 2.2.2.1).

As seen in Figure 8, growth and decline of full-day kindergarten enrollment in the highest SES category followed a similar trend of the ABG from year to year (see Figure 9), with a large growth in the first two years of the ABG and a lessening of full-day enrollment in recent years, when ABG funding has been significantly less than it was in earlier years. It should be noted, however, that as a representation of the total population, the number of school districts in the highest SES category decreased dramatically throughout the referenced years (again, see Figure 8): in 2005, school districts in the highest SES represented 42.3% of all school districts; in 2009, they represented 29.3% of all school districts; and in 2013, they represented just 21.4% of all school districts.

With such a large decrease in the number of schools categorized as highest socio-economic status (just over 20 percentage points from 2005 to 2013), the overall decline in full-day kindergarten enrollment in this category may be a result of school districts shifting SES

population (to the high SES category), instead of solely a change in kindergarten enrollment preference.

The ABG had the greatest influence on full-day kindergarten enrollment among school districts in the high and low SES categories, which increased their full-day kindergarten programs with the establishment of the ABG and tended to maintain largely full-day programs, despite a decrease in funding in later years. The number of school districts in the high category was more consistent than in the highest category, although it did see growth as a percentage of all school districts: in 2005, school districts in this category represented 47.3% of all school districts, in 2009, they represented 55.0% of all school districts; and in 2013, they represented 56.9% of all school districts. The high category saw a growth of school districts of 9.6 percentage points from 2005 to 2013, and the low category saw a growth of school districts of 9.0 percentage points in the same years. As more and more school districts moved into the high and low categories, more and more students were enrolled in full-day kindergarten.

The SES group in which a school district falls varies by year, so group membership is not stable across years. Because of this, Figure 8 may appear to overstate the effect of the ABG on the lowest SES category, particularly during its first year. However, it is important to consider the variable used for this study – school districts – and to remember that it fails to recognize the actual number of students within a school or district. While full-day kindergarten enrollment in the lowest SES category grew 10 percent during the first year of the ABG, this category represented just 1.8% of all school districts during that year. As low-income school districts tend to serve very large populations of students (for example, the Philadelphia School District and the Pittsburgh Public Schools), this category still represents a tremendous number of students. From 2002 through 2010, as full-day kindergarten enrollment increased within this category, so too did

the number of school districts that fell into this SES category. When funds fell in 2010, full-day kindergarten enrollment decreased sharply, by nearly 14%, the following year. The lowest SES category was still increasing as a percentage of all schools, meaning that many more students were enrolled in half-day kindergarten during these years. As such, Figure 8 may actually understate the problem: as more families came to qualify for free and reduced lunch, their school districts were less likely to offer full-day kindergarten. Especially when considering the growing number of students enrolled in lower SES category school districts, this means that, during later years of the ABG, more and more children were enrolled in half-day kindergarten classrooms as their families moved in the direction of financial poverty.

4.2.2 Current Financial Conditions

Table 12. School districts planning to offer full-day kindergarten that have experienced financial pressure (sample).

SES Categories	<i>n</i>	%
Highest (n=28)	9	32.1%
High (n=100)	47	47.0%
Low (n=29)	18	62.1%
Lowest (n=5)	4	80.0%
Total	78	48.1%

Full-day kindergarten. Participants indicated varied experiences with financial pressure and managing funds in order to provide full-day kindergarten. Nearly half of all participants indicated that they had experienced some financial pressure in providing full-day kindergarten (see Table 12). While the data show an increase in financial pressure as progressing from highest to lowest SES category, the uneven representation of school districts and participants in each category may overstate the real differences in the financial pressure and experiences.

Table 13. How those districts that have experienced financial pressure in offering full-day kindergarten have managed the pressure (disaggregate of sample in Table 13).

Strategies	Total (n=78)		Highest (n=9)		High (n=47)		Low (n=18)		Lowest (n=4)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
We considered cutting back to half-day but received criticism from parents/ guardians.	10	12.80%	2	22.20%	5	10.60%	2	11.10%	1	25.00%
We have explored new financial opportunities to fund full-day kindergarten.	12	15.40%	0	0.00%	8	17.00%	4	22.20%	0	0.00%
We have cut back in other ways to fund full-day kindergarten.	52	66.70%	5	55.60%	33	70.20%	12	66.70%	2	50.00%
We considered cutting back to half-day but received criticism from other stakeholders.	5	6.40%	0	0.00%	3	6.40%	0	0.00%	2	50.00%

Among those districts that did indicate financial pressure, participants most commonly indicated cutting back in other ways in order to fund full-day kindergarten, with two thirds of all participants indicating this response (see Table 13). The most commonly identified budget reduction strategy was reducing staff, followed by increasing class sizes and making non-program budget cuts. Note that, while 52 participants chose the response “We have cut back in other ways,” Table 14 represents a summary of text comments participants recorded (not all 52 participants left comments). No other given item was consistently identified among participants.

Table 14. Text responses to "Cut back in other ways" (n=44).

Budget Reduction Strategy	<i>n</i>	%
Reduced staff (including support staff)	11	25%
Increased class sizes	10	23%
Made non-program budget cuts	10	23%
Downsized extracurricular activities	5	11%
Modified or delayed wages/benefits	3	7%
Furloughed staff	2	5%
Eliminated Pre-K	1	2%
Reduced administration	1	2%
Raised taxes	1	2%

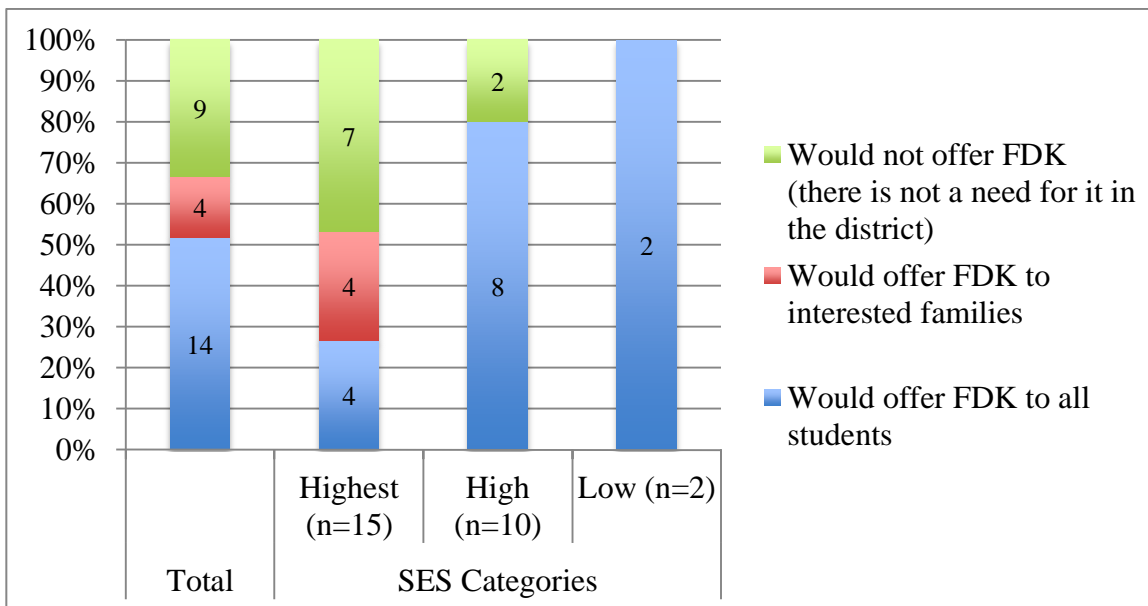


Figure 10. Sample districts' provision of full-day kindergarten if money were not a factor.

Half-day kindergarten. Half of all participants would offer full-day kindergarten to all students if money were not a factor (see Figure 10). Nearly half of all participants in the highest SES category and 20% of participants in the high SES category would not offer full-day kindergarten even if money were not a factor, and only participants representing school districts in the highest SES category would offer full-day kindergarten to interested families. With a small sample of 15 and 10, respectively, however, these data may overstate conclusions.

4.2.3 Interpretation

Both historical data and current survey data support the idea that, generally, if school districts are financially able, they will choose to provide full-day kindergarten for their students. More than half of school districts offering half-day kindergarten would provide a full-day program if more money was available to them. School districts require different kinds and amounts of financial assistance, especially based on a school district's interest in providing full-day kindergarten at all. As many school districts have given such priority status to full-day kindergarten in their decision-making, these data raise questions about the accommodations districts would make should the ABG or other similar funding streams disappear.

Data shown in Figure 10 further support a nearly universal interest in full-day kindergarten throughout Pennsylvania's public schools, especially among school districts serving students from low-income families. Only those school districts in the high and highest SES categories were not interested in full-day kindergarten, and it is possible that a small sample of these categories may overstate disinterest, especially in the high SES category. This data may also suggest that higher SES category school districts truly have very different perspectives on full- and half-day kindergarten than lower SES school districts. The majority of school districts that plan to provide half-day kindergarten for the 2014-2015 school year are in the highest SES category, and even within this group more than half would provide full-day kindergarten to at least some students if money were available to do so.

These data support implications from research question one, that when a school district decides to offer full-day kindergarten, money is no longer a question. Instead, money is cut from other areas that are lower priorities. This is supported by Table 14, which identifies the specific

cuts that nearly 40% of participants (n=52) have made to support their decision to provide full-day kindergarten.

4.3 RESEARCH QUESTION THREE

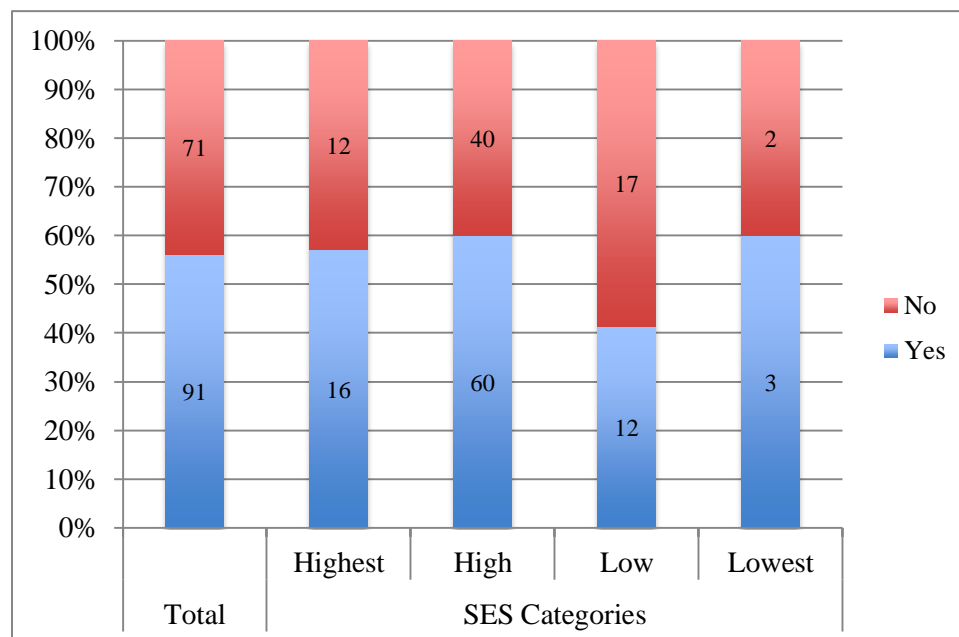


Figure 11. District notification to parents/guardians about compulsory school age.

More than 56% percent of all participants indicated that their school districts notify parents/guardians of Pennsylvania’s compulsory school age. The low SES category had the lowest notification rate, with just 41.4% of participants indicating that their school districts notify parents/guardians of the compulsory age (see Figure 11). Despite the policy, 86% of participants indicated that, to the best of their knowledge, no parents to few parents/guardians choose not to enroll their children in kindergarten.

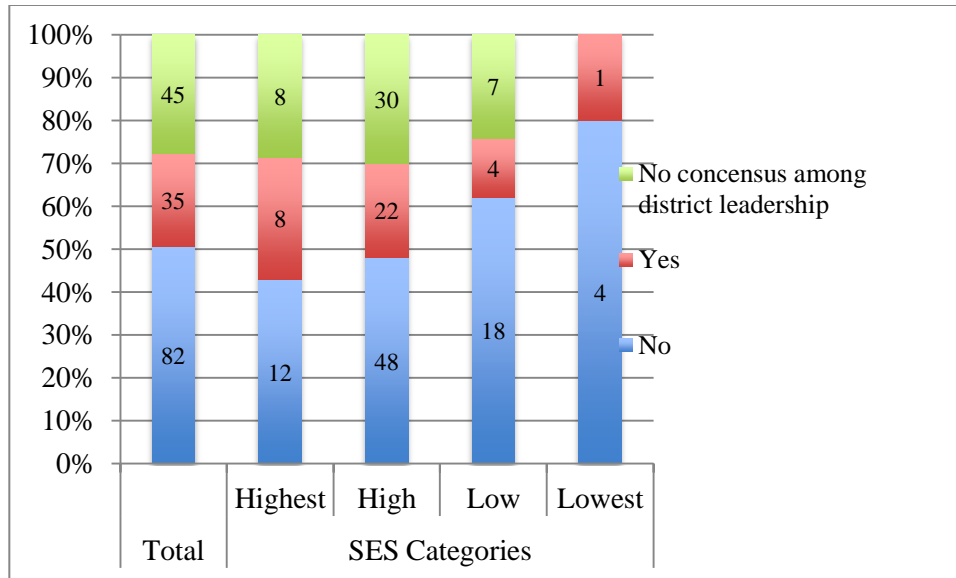


Figure 12. District agreement with compulsory school age policy, by SES category.

Half of the all participants (50.6%) indicated that their school district leadership does not agree with this policy, with 21.6% of participants stating that their district leadership does agree and 27.8% stating that there is no consensus among district leadership. Disagreement with the policy increased moving lower in SES categories (see Figure 12).

4.3.1 Interpretation

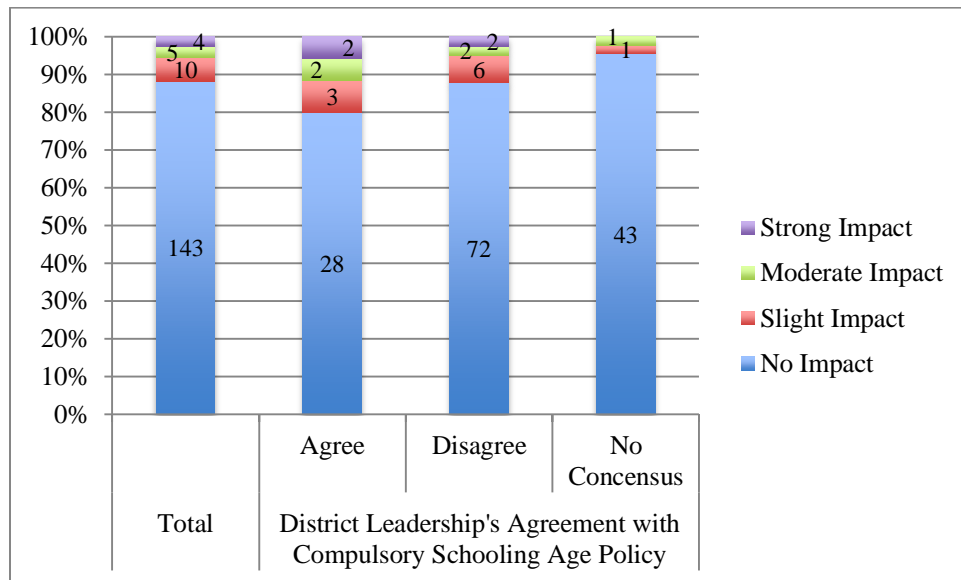


Figure 13. Policy impact on kindergarten program decision making, by district leadership's agreement on policy.

Pennsylvania's current compulsory schooling policy has little effect on kindergarten enrollment or school districts' decisions whether or not to provide full or half day kindergarten. The policy generally had little to no impact on school district's decision to provide full or half-day kindergarten (no impact total = 88.3%), even when considering the leadership's position on the policy (see Figure 13). These results suggest that state policy is out of step with the practice of parents and school districts.

5.0 DISCUSSION

5.1 RESPONSES TO RESEARCH QUESTIONS

5.1.1 Research Question One

The current status of full-day kindergarten is consistent with historical evidence: the majority of Pennsylvania's school districts, especially those serving greater numbers of children from low-income backgrounds, want to provide full-day kindergarten to their students, whether or not it is a financially feasible option. Over 97% of school district leaders indicated that research supporting the benefits of full-day kindergarten was important to their district's decision to provide full-day kindergarten, and over 95% of school district leaders indicated their district's previous success with full-day kindergarten as compared to half-day was important in deciding to offer full-day kindergarten for the coming year. Full-day kindergarten was more highly desired by school districts in the lower three SES categories; moreover, all survey participants representing school districts from the lowest SES category indicated that they will be providing full-day kindergarten for the 2014-15 school year, findings that are consistent with Lee et al. (2006), stating that "full-day programs are more likely to enroll less advantaged children" (p. 194). While research and academic outcomes for students were very important to participants who represent school districts planning to offer full-day kindergarten for the 2014-15 school

year, money was a key determinant for all school leaders when deciding what kind of kindergarten program to provide. Student-centered, outcome-driven considerations seemed to justify what is obviously a financial battle for most participants, but, unfortunately, as one respondent reported in an optional text comment, “It’s all about the money.”

It is important to note that not all school districts were interested in full-day kindergarten; however, according to survey data, only superintendents from resource-rich school districts are competent in their students’ ability to succeed with half-day kindergarten. One highest SES category superintendent reported that their district has had half-day kindergarten for decades and continually produces successful students. Comments from superintendents in the low and lowest SES categories repeat themes of how necessary full-day kindergarten is for students who come to school underprepared.

5.1.2 Research Question Two

In brief, money is a very important factor in a district’s ability to provide full-day kindergarten. Most school districts, especially those serving students from lower socio-economic statuses, will offer full-day kindergarten as long as they have the financial resources to do so, and if financial resources are not readily available, many school districts will take whatever action is necessary to provide a full-day program. This idea is supported by the numerous sacrifices districts cited to maintain full-day programming, including increasing upper-level class sizes, cutting support staff, and reducing electives. Some participants representing school districts that plan to offer half-day kindergarten stated that their choice is purely financial, and support for that view becomes larger if money is expanded to include resources in general.

Trend analysis of the growth of full-day kindergarten further supports an “if there is money, we will provide it” train of thought. With the establishment of the Accountability Block Grant, full-day kindergarten in school districts across SES categories increased, and as funds leveled off, so did full-day kindergarten enrollment. As seen in Figure 8, 100% of the lowest SES category school districts enrolling students in full-day kindergarten from 2007 to 2010 and more than 90% of low SES category school districts opting for full-day kindergarten for five years around the same time period. When the money became unreliable, some school district simply could not make the financial adjustments necessary to continue providing full-day kindergarten. Participants indicated that many experience financial pressure, and those districts that reported cutting back in other ways in order to afford full-day kindergarten reported increasing class sizes, cut grade-level staff, reducing electives, and even eliminating pre-K – which no early childhood education advocate would ever recommend.

5.1.3 Research Question Three

According to survey data, the compulsory school age policy has very little effect on school districts’ decision to provide half-day kindergarten, full-day kindergarten, or no kindergarten, although the policy had slightly more impact in school districts whose leadership agrees with the policy. Few participants even recognized the missing legal requirement to provide kindergarten of any kind. One notable exception is a survey respondent who said that, in that person’s school district, financial circumstances made offering full-day kindergarten difficult and transportation limitations made a half-day option unfeasible, leading the district to consider cutting the program altogether. To this end, lowering the compulsory schooling age would also have little effect on kindergarten decision-making at the school district level.

5.2 IMPLICATIONS

5.2.1 Compulsory Age and Kindergarten Provision Policies

Data and literature (Cooper et al, 2010; Cryan et al., 1992; Elicker & Mathur, 1997) both support a policy that all school districts provide full-day kindergarten to students. Parents want full-day kindergarten (as indicated by survey participants), and superintendents believe in its value, identifying many reasons their districts have decided to offer it for the 2014-2015 school year. For the overwhelming majority of school districts in Pennsylvania that prioritize providing full-day kindergarten, such a policy would support existing practice. In higher SES category school districts that enroll students in half-day kindergarten, it is quite likely that these districts would continue to enroll a substantial percentage of their students in a half-day program. In either case, a policy requiring all school districts to provide a full-day option would grant parents and guardians of all income levels a choice in the type of education their children receive.

This study also supports a policy change of lowering the compulsory school age. Data alone (see section 5.1.3) do not support this recommendation for the purposes of affecting decision-making or increasing student enrollment; such a change would likely have little actual effect on increasing overall kindergarten enrollment. Context, however, does provide justification for such a recommendation. Without a state policy that actually requires children to attend kindergarten, the state has no obligation to provide financial support even to those districts in the greatest need. Lowering the compulsory school age would effectively remove one of the state's last defenses against not providing the funding necessary to maintain full-day kindergarten in all of Pennsylvania's school districts.

This study does not, however, support a policy of compulsory full-day kindergarten enrollment for students. Such a policy is undesirable by a significant proportion of the state population. Full-day kindergarten is, however, highly desirable among many school districts, with the most supportive districts being those in the lower SES categories. Such evidence supports state assistance in providing full-day kindergarten in school districts with high percentages of students who qualify for free and reduced lunch, a statement that is further supported by literature (Lee et al, 2006).

5.2.2 Financial Support and Advocacy

Data do support continued financial support for kindergarten, especially in low-income school districts. Money becomes a more important factor in a school district's ability to provide kindergarten as the concentration of students on free or reduced lunch within a school district increases, and data from this research support Pennsylvania's creating a dedicated budget line item for kindergarten (which may also require a policy change of grade level funding reporting). With a compulsory schooling age of eight and no state law requiring districts provide kindergarten, Pennsylvania is not required to give funds to provide kindergarten, in turn putting this onus on the local district. The Accountability Block Grant gave many school districts the resources they required to build and sustain full-day programs; however, as the funds became unreliable, full-day kindergarten enrollment stagnated. School district leaders (especially those representing resource-poor school districts) have made evident that the main factor in their deciding whether to provide full- or half-day kindergarten is money, and until Pennsylvania can reliably allocate specific resources, district leaders will continue to make decisions primarily based on what they can and cannot afford.

The Pennsylvania legislature worked to meet school districts' need in the 2014-2015 fiscal year budget. In this budget, Governor Tom Corbett introduced a "Ready to Learn" block program, which is to provide funding for public school programs that "focus on student achievement and academic success, and funding for the successful Accountability Block Grant" (Ready to Learn Block Grant, 2014, para. 1). This grant includes the ABG (again funded at \$100 million), and includes an additional \$100 million allocation for school districts as determined by various factors (Ready to Learn Block Grant, 2014). While this is the highest funding given to since 2011, it still falls quite short of ABG funding from 2006 to 2009, when full-day kindergarten enrollment in Pennsylvania grew the most. Even at this funding level, school districts will still have to negotiate resources in order to provide full-day kindergarten to students.

Such evidence provides an opportunity for early childhood education advocates to rally support among teachers, families, school board members, and others who care about young children's education to change Pennsylvania's policies that leave out kindergarten. Even though only 15 states have policies requiring children attend kindergarten, 45 have policy (and funding) in place that require school districts to provide kindergarten; a quarter of those even require that all public school districts provide full-day kindergarten. Other states' policies show that, even without a change in the compulsory age of schooling, it is possible to change what we legally expect of our school districts – which would in turn require a change what they receive from legislators.

5.2.3 An Alternate Policy Recommendation

A very different policy consideration that emerges from these data is the possibility of consolidating resources, even at just the kindergarten level, as a means of conserving funds and providing better kindergarten programs. One hundred thirty-six school districts each had a total kindergarten student population of fewer than 100 students in 2013 (Kids Counts Data Center, n.d. a), and such small districts might find that they are able to better serve larger groups of students by combining existing and likely limited financial resources, particularly in the cases of districts that indicated space and transportation limitations. School districts could consider working with their intermediate unit for guidance or forming multi-districts coalitions of administrators, teachers, and parents/guardians to navigate districts' differing needs and contributions. At the state level, financial incentives could be granted to school districts that able to provide full-day programs and save resources through collaboration.

5.3 FUTURE RESEARCH

As a continuation of policy study, this research could be replicated in the four other states for which there are no requirements that school districts provide kindergarten. Research needs to be conducted on their budget practices, as school leaders in these states may face similar financial challenges as those that Pennsylvania district leaders face.

While participants at nearly every school district in total said that their district would provide full-day kindergarten if money were not a factor, a portion of participants in the highest SES category said that their district would still only provide half-day. Research could be

conducted specifically within this category to discern the differences among very wealthy school districts that are and are not interested in full-day kindergarten. In addition, this study suggests that school districts that may be very dissimilar from one another commonly experience similar struggles in order to provide full-day kindergarten. As such, future research could involve case studies of school leaders at varied school districts to determine specifically what sacrifices are made to provide full-day kindergarten and the consistency of those sacrifices among districts.

As mentioned previously, four participants stated that their school districts offer both full-day and half-day kindergarten, two of whom described a requirement of having to test into the full-day program. This dual-program kindergarten model invites questions and is a potentially interesting study of cost effectiveness and resource management. With fluctuating state-level financial resources, Pennsylvania school districts continue to search for alternative options. A comprehensive understanding of how districts' prioritize student need and manage funds and resources in a dual-kindergarten approach may provide data and previously unexplored avenues to distressed districts.

Finally, perhaps as a longitudinal study, research could be conducted to examine how sacrifices made to provide full-day kindergarten affected overall academic outcomes, particularly for those students affected by the cuts. Participants across SES categories indicated higher academic outcomes for students in full-day kindergarten as a very important factor in their district's kindergarten decision (see Appendix D), and school districts were willing to make sacrifices necessary to provide a full-day program. Literature supports academic and social benefits to students enrolled in full-day kindergarten (Chatterji, 2006, Cooper et al, 2010; Cryan et al., 1992; Lee et al, 2006; Elicker & Mathur, 1997), and longitudinal research studying the effects of full-day kindergarten afforded at the expense of other academic considerations would

add to both this study's line of inquiry as well as other studies related to full- and half-day kindergarten.

APPENDIX A

Table 15. Compulsory status and school district requirements, by state.

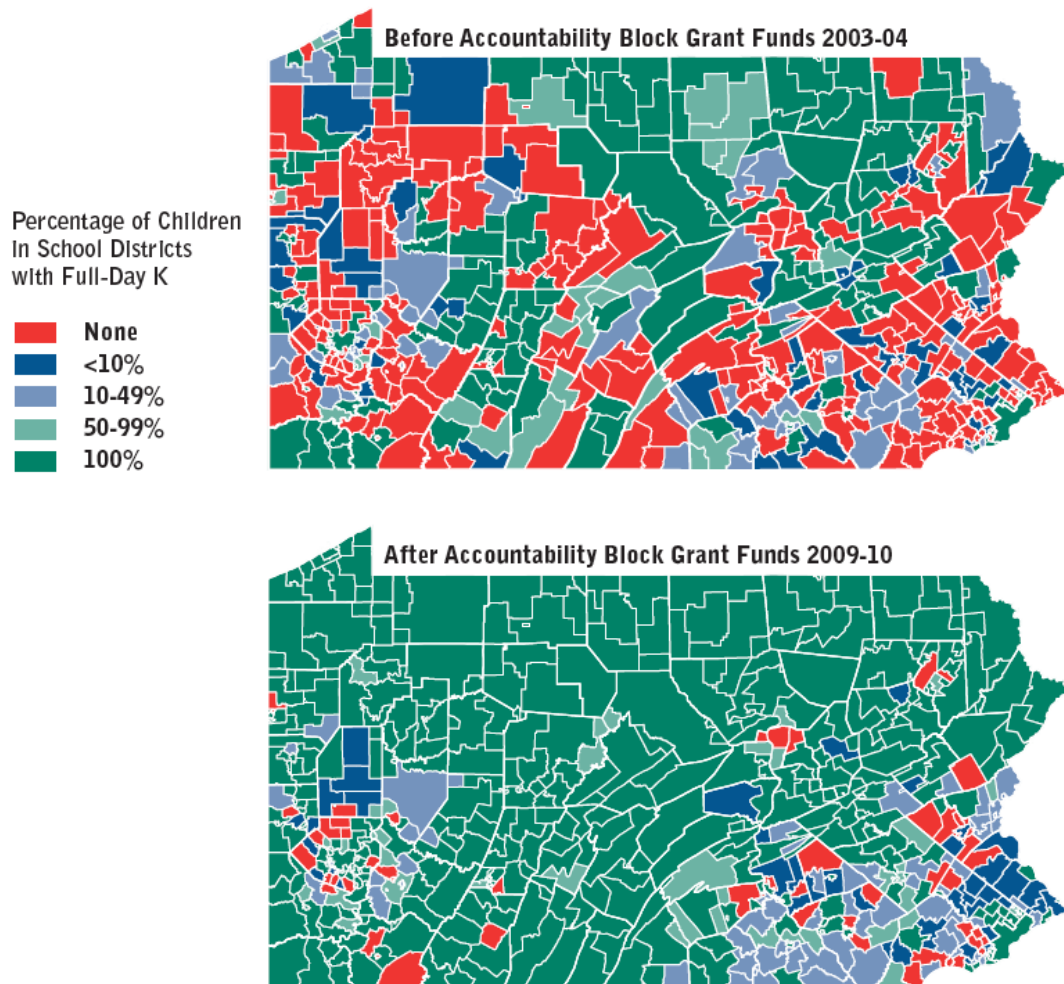
State	Compulsory	Kindergarten Required
Alabama	No	Full
Alaska	No	No Requirement
Arizona	No	Half
Arkansas	Yes	Full
California	No	Half
Colorado	No	Half
Connecticut	Yes	Half
Delaware	Yes	Full
Florida	No	Half
Georgia	No	Half
Hawaii	No	Half
Idaho	No	No Requirement
Illinois	No	Half
Indiana	No	Half
Iowa	No	Half
Kansas	No	Half
Kentucky	No	Half
Louisiana	Yes	Full
Maine	No	Half
Maryland	Yes	Full
Massachusetts	No	Half
Michigan	No	Half
Minnesota	No	Half
Mississippi	No	Full
Missouri	No	Half

State	Compulsory	Kindergarten Required
Montana	No	Half
Nebraska	No	Half
Nevada	Yes	Half
New Hampshire	No	Half
New Jersey	No	No Requirement
New Mexico	Yes	Half
New York	No	No Requirement
North Carolina	No	Full
North Dakota	No	Half
Ohio	Yes	Half
Oklahoma	Yes	Full
Oregon	No	Half
Pennsylvania	No	No Requirement
Rhode Island	Yes	Half
South Carolina	Yes	Full
South Dakota	Yes	Half
Tennessee	Yes	Full
Texas	No	Half
Utah	No	Half
Vermont	No	Half
Virginia	Yes	Half
Washington	No	Half
West Virginia	Yes	Full
Wisconsin	No	Half
Wyoming	No	Half

(Education Commission of the States, 2011; Education Commission of the States, 2013)

APPENDIX B

Figure 14. School districts with full-day kindergarten before and after the Accountability Block Grant.



(Reprinted with Permission: Pennsylvania Partnerships for Children, 2011.

APPENDIX C

Survey distributed to school district leaders

Demographics, Leadership Experience, and Teaching Experience

This section asks basic demographics and experience questions for sampling purposes.

Q1 Please indicate your age.

Q2 Please indicate your gender.

- ☐ Male
- ☐ Female

Q3 Please indicate your race.

- ☐ White/Caucasian
- ☐ African American
- ☐ Latino/Latina
- ☐ Asian American
- ☐ Native American
- ☐ Pacific Islander
- ☐ Multiple Races
- ☐ Prefer not to answer

Q4 Please indicate your position within your school district.

- ☐ Superintendent (or acting superintendent)
- ☐ Assistant superintendent
- ☐ Director of curriculum, instruction, or other specialized department
- ☐ Elementary school principal
- ☐ Kindergarten teacher
- ☐ Other (please describe) _____

Q5 Please indicate the total number of years you have served in this position.

Q6 Please indicate the number of years you have served in this position within your current school district.

Q7 Please indicate the number of years you have taught the following grades:

	Never	One to three years	More than three years
Preschool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kindergarten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
First grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Your District's Kindergarten Choices

This section asks questions about how your district decides what kind of kindergarten to provide to students, including such issues as stakeholders and finances.

Q8 Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?

- ☐ Full-day kindergarten
- ☐ Half-day kindergarten

Answer If Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?
Full-day kindergarten Is Selected

Q9 Please indicate the importance of the following in deciding to offer full-day kindergarten.

	Not important	Somewhat unimportant	Somewhat important	Very important
Money was available to offer it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research indicates better outcomes for students who attend full-day kindergarten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents/guardians wanted full-day kindergarten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic outcomes as compared to years with half-day kindergarten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues within the school district (other teachers, school board, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please describe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Answer If Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?
Full-day kindergarten Is Selected

Q11 Many school districts have faced financial pressure to cut back to half-day kindergarten. What has been your experience with such pressures?

- ☐ We have not experienced any financial pressure.
- ☐ We considered cutting back to half-day but received criticism from parents/guardians.
- ☐ We have explored new financial opportunities to fund full-day kindergarten (please describe).
- ☐ _____
- ☐ We have cut back in other ways to fund full-day kindergarten (please describe). _____
- ☐ We considered cutting back to half-day but received criticism from other stakeholders (please describe).
- ☐ _____
- ☐ Other (please describe) _____

Answer If Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?
Half-day kindergarten Is Selected

Q12 Indicate the importance each of the following in deciding to offer half-day kindergarten.

	Not important	Somewhat unimportant	Somewhat important	Very important
Money was not available to offer full-day kindergarten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Research does not support lasting effects of full-day kindergarten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents/guardians wanted half-day kindergarten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic outcomes as compared to years with full-day kindergarten	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues within the school district (other teachers, school board, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please describe)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Answer If Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?
Half-day kindergarten Is Selected

Q14 Do you plan to provide supplementary care/education during the 2014/15 school year?

- ☐ Yes, the school district houses a child care facility and/or supplementary care facility.
- ☐ Yes, families can choose to keep their child/children in school for the other half of the day.
- ☐ No, but we can provide assistance by locating a child care center/provider if requested by a parent/guardian.
- ☐ Other (please describe) _____

Answer If Do you plan to provide supplementary care/education during the 2014/15 school year?
Yes, families can choose to keep their child/children in school for the other half of the day. Is
Selected

Q15 Where may students attend school for the other half of the day?

- ☐ Within the school district
- ☐ Outside of the school district
- ☐ Other (please describe) _____

Answer If Do you plan to offer full-day or half-day kindergarten for the 2014/2015 school year?
Half-day kindergarten Is Selected

Q16 If money were not a factor, would you provide full-day kindergarten?

- ☐ Yes, to all students
- ☐ Yes, to those families who were interested
- ☐ No, there is not a need for full-day kindergarten in our district
- ☐ Other (please describe)

Compulsory Education

These final questions relate to Pennsylvania policy P.S. 13-1327, which states that a child is not required to enroll in schooling until age eight.

Q17 Does your district notify parents/guardians of this policy?

- ☐ Yes
- ☐ No

Q18 To the best of your knowledge, how many parents choose not to enroll students in kindergarten?

- ☐ Very few or none
- ☐ Few
- ☐ Some
- ☐ Many
- ☐ Unknown

Q19 Does your district agree with this policy?

- ☐ Yes
- ☐ No
- ☐ No consensus among district leadership

Q20 How does this policy impact your district's decision to provide full- or half-day kindergarten?

- ☐ No impact
- ☐ Slight impact
- ☐ Moderate impact
- ☐ Strong impact

APPENDIX D

Importance of given items in deciding to offer full-day kindergarten (all responses)

Table 16. Responses to survey item, "Money was available to offer FDK."

Rating	Total	SES Categories			
		Highest (n=12)	High (n=90)	Low (n=27)	Lowest (n=5)
Not important	7.5%	8.3%	7.8%	7.4%	0.0%
Somewhat unimportant	6.7%	0.0%	8.9%	3.7%	0.0%
Somewhat important	41.8%	25.0%	47.8%	29.6%	40.0%
Very important	44.0%	66.7%	35.6%	59.3%	60.0%

Table 17. Responses to survey item, "Research indicates better academic outcomes for children who attend FDK."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	0.7%	0.0%	1.1%	0.0%	0.0%
Somewhat unimportant	1.5%	8.3%	0.0%	0.0%	20.0%
Somewhat important	13.4%	25.0%	12.2%	11.1%	20.0%
Very important	84.3%	66.7%	86.7%	88.9%	60.0%

Table 18. Responses to survey item, "Parents/guardians wanted FDK."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	3.7%	0.0%	5.6%	0.0%	0.0%
Somewhat unimportant	11.2%	16.7%	8.9%	14.8%	20.0%
Somewhat important	42.5%	41.7%	42.2%	48.1%	20.0%
Very important	42.5%	41.7%	43.3%	37.0%	60.0%

Table 19. Responses to survey item, "Academic outcomes as compared to years with HDK."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	2.2%	8.3%	1.1%	3.7%	0.0%
Somewhat unimportant	2.2%	8.3%	0.0%	0.0%	40.0%
Somewhat important	16.4%	25.0%	14.4%	18.5%	20.0%
Very important	79.1%	58.3%	84.4%	77.8%	40.0%

Table 20. Responses to survey item, "Colleagues within the school district (teachers, school board, etc.)."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	11.2%	25.0%	11.1%	3.7%	20.0%
Somewhat unimportant	18.7%	16.7%	18.9%	22.2%	0.0%
Somewhat important	44.0%	41.7%	44.4%	44.4%	40.0%
Very important	26.1%	16.7%	25.6%	29.6%	40.0%

Table 21. Responses to survey item, "Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	26.1%	41.7%	23.3%	25.9%	40.0%
Somewhat unimportant	31.3%	16.7%	32.2%	40.7%	0.0%
Somewhat important	31.3%	33.3%	34.4%	22.2%	20.0%
Very important	11.2%	8.3%	10.0%	11.1%	40.0%

Table 22. Responses to survey item, "Other."

Rating	Total	SES Categories			
		Highest	High	Low	Lowest
Not important	79.9%	83.3%	82.2%	81.5%	20.0%
Somewhat unimportant	0.7%	0.0%	0.0%	3.7%	0.0%
Somewhat important	0.0%	16.7%	17.8%	14.8%	60.0%
Very important	19.4%	0.0%	0.0%	0.0%	20.0%

APPENDIX E

Importance of given items in deciding to offer half-day kindergarten (all responses)

Table 23. Responses to survey item, "Money was not available to offer FDK."

Rating	Total	SES Categories		
		Highest (n=16)	High (n=10)	Low (n=2)
Not important	14.3%	25.0%	0.0%	0.0%
Somewhat unimportant	10.7%	12.5%	10.0%	0.0%
Somewhat important	14.3%	12.5%	20.0%	0.0%
Very important	60.7%	50.0%	70.0%	100.0%

Table 24. Responses to survey item, "Research does not support lasting effects of FDK."

Rating	Total	SES Categories		
		Highest	High	Low
Not important	50.0%	37.5%	70.0%	50.0%
Somewhat unimportant	14.3%	18.8%	0.0%	50.0%
Somewhat important	21.4%	31.3%	10.0%	0.0%
Very important	14.3%	12.5%	20.0%	0.0%

Table 25. Responses to survey item, “Parents/guardians wanted HDK.”

Rating	Total	SES Categories		
		Highest	High	Low
Not important	53.6%	50.0%	60.0%	50.0%
Somewhat unimportant	17.9%	6.3%	30.0%	50.0%
Somewhat important	21.4%	31.3%	10.0%	0.0%
Very important	7.1%	12.5%	0.0%	0.0%

Table 26. Responses to survey item, "Academic outcomes as compared to years with FDK."

Rating	Total	SES Categories		
		Highest	High	Low
Not important	57.1%	56.3%	60.0%	50.0%
Somewhat unimportant	7.1%	6.3%	10.0%	0.0%
Somewhat important	17.9%	18.8%	20.0%	0.0%
Very important	17.9%	18.8%	10.0%	50.0%

Table 27. Responses to survey item, "Colleagues within the school district (teachers, school board, etc.)."

Rating	Total	SES Categories		
		Highest	High	Low
Not important	60.7%	62.5%	60.0%	50.0%
Somewhat unimportant	28.6%	25.0%	40.0%	0.0%
Somewhat important	3.6%	6.3%	0.0%	0.0%
Very important	7.1%	6.3%	0.0%	50.0%

Table 28. Responses to survey item, "Colleagues outside of the school district (other district leaders, intermediate unit staff, etc.)."

Rating	Total	SES Categories		
		Highest	High	Low
Not important	75.0%	81.3%	70.0%	50.0%
Somewhat unimportant	14.3%	12.5%	20.0%	0.0%
Somewhat important	3.6%	6.3%	0.0%	0.0%
Very important	7.1%	0.0%	10.0%	50.0%

Table 29. Responses to survey item, "Other."

Rating	Total	SES Categories		
		Highest	High	Low
Not important	57.1%	56.3%	60.0%	50.0%
Somewhat unimportant	0.0%	0.0%	0.0%	0.0%
Somewhat important	7.1%	12.5%	0.0%	0.0%
Very important	35.7%	31.3%	40.0%	50.0%

APPENDIX F

School districts' experiences with financial pressure (full-day kindergarten; all responses)

Table 30. Responses to survey item, "We have not experienced financial pressure."

Response	Total	SES Categories			
		Highest (n=12)	High (n=90)	Low (n=27)	Lowest (n=5)
No					
Pressure	41.80%	25.00%	47.80%	33.30%	20.00%
Pressure	58.2%0	75.00%	52.20%	66.70%	80.00%

Table 31. Responses to survey item, "We considered cutting back to half-day but received criticism from parents/guardians."

Response	Total	SES Categories			
		Highest	High	Low	Lowest
No	91.8%	83.3%	94.4%	92.6%	60.0%
Yes	8.2%	16.7%	5.6%	7.4%	40.0%

Table 32. Responses to survey item, "We have explored new financial opportunities to fund full-day kindergarten."

Response	Total	SES Categories			
		Highest	High	Low	Lowest
No	91.8%	83.3%	94.4%	92.6%	60.0%
Yes	8.2%	16.7%	5.6%	7.4%	40.0%

Table 33. Responses to survey item, "We have cut back in other ways to fund full-day kindergarten."

Response	Total	SES Categories			
		Highest	High	Low	Lowest
No	91.8%	83.3%	94.4%	92.6%	60.0%
Yes	8.2%	16.7%	5.6%	7.4%	40.0%

Table 34. Responses to survey item, "We considered cutting back to half-day but received criticism from other stakeholders."

Response	Total	SES Categories			
		Highest	High	Low	Lowest
No	91.8%	83.3%	94.4%	92.6%	60.0%
Yes	8.2%	16.7%	5.6%	7.4%	40.0%

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